STIC-Biotech/ChemLib

From: Sent: To: Subject:

Davis, Minh-Tam Tuesday, March 11, 2003 3:01 PM STIC-Biotech/ChemLib Search request for 09/847046

Please search in commercial database, PGPUB, and issued patent files:

1) SEQ ID NO:1 and 2.

Thank you. MINH TAM DAVIS

ART UNIT 1642, ROOM 8401, MB 8E12

305-2008

Oct 2000 purity date

Edward Hart

Technicai Info. Specialis

STIC/Biotech

CMI 6B02 Tel: 305-9203

Searcher:_ Phone:_ Location: Date Picked Up: __ Date Completed: 3 Searcher Prep/Review: Clerical:_ Online time:

TYPE OF SEARCH: NA Sequences: AA Sequences:___ Structures: Bibliographic:____ Litigation:____ Full text: Patent Family:_____ Other:

VENDOR/COST (where applic.) STN: DIALOG: Questel/Orbit:___ DRLink:_ Lexis/Nexis:_ Sequence Sys.: & J. I. I. I. WWW/Internet:_ Other (specify):_

THIS PAGE BLANK (USE)

```
Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Run
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                        No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          on:
             98765482
                                                                                                                                                                                                                                                                                                                       Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
      4525.6
2811.6
2540.4
2540.4
2540.4
776.2
349.8
348.8
348.8
                                                                                                                                                                                                                      Score
        100.0
62.1
56.1
17.1
7.7
7.7
7.7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          N_Geneseq_101002:*
1: /SIDSZ/gcgdata/g
2: /SIDSZ/gcgdata/g
3: /SIDSZ/gcgdata/g
4: /SIDSZ/gcgdata/g
6: /SIDSZ/gcgdata/g
6: /SIDSZ/gcgdata/g
6: /SIDSZ/gcgdata/g
6: /SIDSZ/gcgdata/g
6: /SIDSZ/gcgdata/g
6: /SIDSZ/gcgdata/g
7: /SIDSZ/gcgdata/g
9: /SIDSZ/gcgdata/g
11: /SIDSZ/gcgdata/
11: /SIDSZ/gcgdata/
12: /SIDSZ/gcgdata/
13: /SIDSZ/gcgdata/
14: /SIDSZ/gcgdata/
15: /SIDSZ/gcgdata/
16: /SIDSZ/gcgdata/
17: /SIDSZ/gcgdata/
18: /SIDSZ/gcgdata/
19: /SIDSZ/gcgdata/
19: /SIDSZ/gcgdata/
10: /SIDSZ/gcgdata/
11: /SIDSZ/gcgdata/
12: /SIDSZ/gcgdata/
13: /SIDSZ/gcgdata/
14: /SIDSZ/gcgdata/
15: /SIDSZ/gcgdata/
                                                                                                                                                                                                                  Query
Match Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-847-046-1
4526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          March 22, 2003, 04:22:07; Search time 959 Seconds (without alignments)
10628.305 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2185239 seqs, 1125999159 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SIDS2/gcgdata/geneseq/geneseqn-embl/NA1985, DAT: *
/SIDS2/gcgdata/geneseq/geneseqn-embl/NA1985, DAT: *
/SIDS2/gcgdata/geneseq/geneseqn-embl/NA1987, DAT: *
/SIDS2/gcgdata/geneseq/geneseqn-embl/NA1987, DAT: *
/SIDS2/gcgdata/geneseq/geneseqn-embl/NA1988, DAT: *
/SIDS2/gcgdata/geneseq/geneseqn-embl/NA1989, DAT: *
/SIDS2/gcgdata/geneseq/geneseqn-embl/NA1990, DAT: *
/SIDS2/gcgdata/geneseq/geneseqn-embl/NA1991, DAT: *
/SIDS2/gcgdata/geneseq/geneseqn-embl/NA1992, DAT: *
/SIDS2/gcgdata/geneseq/geneseqn-embl/NA1992, DAT: *
/SIDS2/gcgdata/geneseq/geneseqn-embl/NA1993, DAT: *
/SIDS2/gcgdata/geneseq/geneseqn-embl/NA1993, DAT: *
/SIDS2/gcgdata/geneseq/geneseqn-embl/NA1994, DAT: *
/SIDS2/gcgdata/geneseq/geneseqn-embl/NA1995, DAT: *
/SIDS2/gcgdata/geneseq/geneseqn-embl/NA1996, DAT: *
/SIDS2/gcgdata/geneseq/geneseqn-embl/NA1999, DAT: *
/SIDS2/gcgdata/geneseq/geneseqn-embl/NA1999, DAT: *
/SIDS2/gcgdata/geneseq/geneseqn-embl/NA1999, DAT: *
/SIDS2/gcgdata/geneseq/geneseqn-embl/NA1090, DAT: *
/SIDS2/gcgdata/geneseq/geneseqn-embl/NA20001B, DAT: *
/SIDS2/gcgdata/geneseq/geneseqn-embl/NA2001B, DAT: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GenCore version 5.1.3
Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /SIDS2/gcgdata/geneseg/genesegn-embl/NA1982.DAT:*
/SIDS2/gcgdata/geneseg/genesegn-embl/NA1983.DAT:*
/SIDS2/gcgdata/geneseg/genesegn-embl/NA1984.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /SIDS2/gcgdata/geneseq/geneseqn-embl/NA1980.DAT:*
/SIDS2/gcgdata/geneseq/geneseqn-embl/NA1981.DAT:*
        4526
2820
2905
2905
2905
2905
3905
360
374
397
397
                                                                                                                                                                                                                      DΒ
          2332324
                                                                                                                                                                                                                      IJ
                            ABK92127
AAH15799
ABV21967
ABV27799
AAH05323
ABV12212
ABV03043
ABV333357
        ABV42280
                                                                                                                                                                                                                                                                                    SUMMARIES
Human cDNA sequenc Human prostate exp Human prostate exp
                                                                                                                                                                                                                    Description
                                                                                                                                                                        Prostate cancer-as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              a a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ၀ ၀
```

Human secreted pro Human GABA transpo Human musculoskele		2 !	1 0	1	75.6	5
Human secreted pro		2	13605	. 7	76	4
Human secreted pro		24	34337	. 7	76.2	ū
		2	1808	. 7	76.8	2
Genomic DNA encodi		24	9947	. 7	79	_
Human digestive sy		2	5314	. 7	79	
_	2 AAK75611	22	5314	7	79	39
		23	5314	. 7	79	
-		24	149671	. 7	79.2	
-		24	147309	8	79.6	36
Human bone marrow		2	546	8	79.8	35
Human brain expres		2	546	8	79.8	34
-		2	546	8	79.8	$\tilde{\omega}$
		22	1083	8	81.4	3
Human immune syste		2	13712	8	82.4	3
Genomic sequence o		2	43069	. 9	84.4	ö
Human histone deac		2	122186	. 9	84.8	ĕ
Human cervical can		2	143	. 9	86	æ
Genomic DNA encodi		24	31208	٠,	86.8	27
		2	1456	. 9	86.8	8
Human reproductive		ນ	811	9	86.8	5
Human cDNA differe		2	90220		90	24
Human nervous syst		Ŋ	4971		90.6	ü
4		1,	17327		91.4	Ñ
		2	34878		92.6	ï
		2	34878		92.6	ŏ
		2	3420	<u>.</u>	93.2	ø
		N	32986	'n	95.4	œ
immune/haem		2	32986	<u>.</u>	95.4	7
5		2	6792	N	97.8	9
		23	1423	ω	106	Ġ
prostat		2	447	N	234.6	4
ncoding :		2	547		290	ω
		N	416	. 7	304.4	ົວ
prostate		N	416	8	307.6	Ξ
Human secreted pro		2	355	5	341	0

ALIGNMENTS

PXC	ARK92127
ID	ABK92127 standard; DNA; 4526 BP.
××	
AC	ABK92127;
×	
DT	15-AUG-2002 (first entry)
××	
DE	Prostate cancer-associated DNA sequence #13.
XX	
Κ¥	Prostate cancer; prostate tumour tissue; human; mammal; cytostatic;
XΣ	rapy; gene; ds.
×	
SO	Mammalia.
X	
PN	WO200230268-A2.
g X	18-APR-2002.
XX	
ΡF	12-OCT-2001; 2001WO-US32045.
X	
PR	13-OCT-2000; 2000US-0687576.
PR	
PR	04-MAY-2001; 2001US-288589P.

BIOTECHNOLOGY

INC

```
P Oy
 о
В
В
                                       Дb
                                                     Š
                                                                               g
V
                                                                                                                                                                   밁
                                                                                                                                                                                   δõ
                                                                                                                                                                                                        B
                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                          뫄
                                                                                                                                                                                                                                                                                                               Q
                                                                                                                                                                                                                                                                                                                                       ρ
γ
                                                                                                                                                                                                                                                                                                                                                                                                                           The present invention relates to methods of detecting a prostate cancer associated transcript in a cell from a patient. The method comprises contacting a biological sample from the patient with comprises contacting a biological sample from the patient with prostate cancer associated polynucleotides (designated PC genes) that cell from the prostate cancer cassociated polynucleotide sequences that is at least 80% identical content. The prostate cancer associated polynucleotide sequences care differentially expressed in prostate tumour tissue or in companisms such as humans or other mammals (e.g. mice, sheep and dogs). The methods of the invention are useful for diagnosing and treating prostate cancer associated genes are cuseful for diagnosing or treating prostate cancer, as well as for concerulate cancer. The nucleic acid sequences are particularly useful concerus therapy, as a vaccine or in antisense applications.

ABS92115 ABK92263 represent prostate cancer associated polynucleotide concerus as manual contents.
                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Sin
Matches 4526;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        patient, useful for modulators of PC, k are expressed in a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Detecting
                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (EOSB-)
 481
                    481
                                                                                                                                                                    241
                                         421
                                                             421
                                                                                   361
                                                                                                       361
                                                                                                                             301
                                                                                                                                              301
                                                                                                                                                                                         241
                                                                                                                                                                                                              181
                                                                                                                                                                                                                                 181
                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                   61
AGTGTTGTCTTAGGAAACAGAACAGAACAGAGAGAGAAAATCCGCTCAGATAC
                                                                                                                                                                   ATTTGAAAGTAGCAAAATAGAAAATAAAGAATTAACAGCAGATACAGAGGACAGCATGGA
                                                                                                                                                                                                            GCCGAGTCGGTGGCGGCTGCAGGCTGGGAGGGAGAAGTGCTACGCCTTTGCAGGTTGGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2002-471335/50
DB; ABG61812.
                                                                                                                                                                                                                                                                                              ATTTTAGTACATTGCAACCAGGTCTTGAAGAACTGAATGAGGCTGTTAGACCTCTGCAGG
                                                                                                                                                                                                                                                                                                                   AAGTGGTTCCAGGCTACCCGGCTAGTCTGGCACGGCCCCGTCTTCTGCCTCCTCCTCCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    22; Page 310-311; 436pp; English
                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EOS
                                                                                                                                                                                                                                                                                                                                                                                                                           4526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        prostate cancer-associated transcript in a cell in a sful for diagnosing prostate cancer (PC) or screening of PC, by determining if prostate cancer-associated ged in a prostate tissue
                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                           BP;
                                                                                                                                                                                                                                                                                                                                                                                                                          1444 A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Wilson
                                                                                                                                                                                                                                                                                                                                                                                           100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                          817
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             XΞ,
                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                          c;
                                                                                                                                                                                                                                                                                                                                                                                           Score 4525.6;
Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Afar
                                                                                                                                                                                                                                                                                                                                                                                                                           890
                                                                                                                                                                                                                                                                                                                                                                                                                          G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Þ
                                                                                                                                                                                                                                                                                                                                                                                                                          1374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    of detecting a pro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Hevezi
                                                                                                                                                                                                                                                                                                                                                                                                                          Τ,
                                                                                                                                                                                                                                                                                                                                                                                                     DB
                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                          1 other;
                                                                                                                                                                                                                                                                                                                                                                                                      24; Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ק
                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   genes
                                                                                                                                                                                                                                                                                                                                                                               Gaps
                   540
                                         480
                                                             480
                                                                                   420
                                                                                                                            360
                                                                                                                                               360
                                                                                                                                                                     300
                                                                                                                                                                                         300
                                                                                                                                                                                                              240
                                                                                                                                                                                                                                 240
                                                                                                                                                                                                                                                      180
                                                                                                                                                                                                                                                                           180
                                                                                                                                                                                                                                                                                              120
                                                                                                                                                                                                                                                                                                                   120
                                                                                                                                                                                                                                                                                                                                        60
                                                                                                                                                                                                                                                                                                                                                            60
                                                                                                                                                                                                                                                                                                                                                                                 0
```

```
Qy
                                                        Qy
                                                                                 Вþ
                                                                                                    Ωy
                                                                                                                            Вр
                                                                                                                                              Qy
                                                                                                                                                                    밁
                                                                                                                                                                                    Qy
                                                                                                                                                                                                              В
                                                                                                                                                                                                                              Qy
                                                                                                                                                                                                                                                     뫄
                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                  Qγ
                                                                                                                                                                                                                                                                                                                                        망
                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                                                                                        Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Вр
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Вр
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Qy
B
                                       Вp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                     1201
                                                                                                                             1381
                                                                                                                                                                                                              1261
                                                                                                                                                                                                                                   1261
                                                                                                                                                                                                                                                                          1201
                                                                                                                                                                                                                                                                                                                                                                                   1021
                                                                                                                                                                                                                                                                                                                                         1081
                                                                                                                                                                                                                                                                                                                                                                                                                            961
                                                                                                                                                                                                                                                                                                                                                                                                                                                961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   721
TCTATGCTGGTTGGCAAGCAGTATCCATGGCATTTTTTGCAATCCTATATTGATGTGGCAG
                                                                                                                                                                               TTTTGGTATTACATGATGTTGATTTAATAATATCTCATGTGGAAAATAATATGCACATTG
                                                                                                                                                                                                             ACATTCCTCAAGATGCTAATGTGGTCTTCAAAAGAGCAGAAGAGGGGGGTTCCAGTGGAAT
                                                                                                                                                                                                                                                     CTTGGCGTCTTCTGGGAAAAGCAGGAGTTCTACTCTTGTTAAGGGACTCTTTGGAAGTGA
                                                                                                                                                                                                                                                                                               TTTTTATTGTTAGCCAACAGGCTACTTATGAAGCTGATAGAAGAACTGCAGAATGGGTTG
                                                                                                                                                                                                                                                                                                                                        AAGTTGCTGAAGATCCTCAACAAGTTTCAACTGTCCATCTCCAACTGGGCTTACCACTGG
                                                                                                                                                                                                                                                                                                                                                                                             CATTGACTACACTGAACATTCACCTGTTTATTAAGACAATGAAAGCACCTCTGTTGACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGAAAGGAAAAGCAAATATTATATTCTCATATGTAAGAGCCATTGGAATACCAGAGCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTTTTAGTGAAGTGAAATATATTACCAACCTGGAAGACCTTCAGAACATAGAAAATGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACTATGGAATTTCAGTTGCCAAGGTTAATTGTGTCAAAGAAGAAGAATATCAAGATACTGTG
                                                   TGGAACTAACAGAAGAAACATTTAATGCAACAGTGATGGCTTCTGACAGCATAGTACTCT
                                                                                             ATGAAGTGGCAGAAACTGTTTTCAGAGATAGGAAGAGAAAATTACCTTTGGAACTTACAG
                                                                                                                                       AGGAAATACAAGAAGATGAAGACAATGACATGGAAGGTCCAGATATAGATGTTCAGGATG
                                                                                                                                                                                                                                                                                                                                                                                   CATTGACTACACTGAACATTCACCTGTTTATTAAGACAATGAAAGCACCTCTGTTGACTG
                                                                                                                                                                                                                                                                                                                                                                                                                            TTCATTGTAAACTAGTCTTGGACTTGACCCAGCAATGTAGAAGAACACTAATGGAACAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                       TTCATTGTAAACTAGTCTTGGACCTTGACCCAGCAATGTAGAAGAACACTAATGGAACAGC
                                                                                   ATGAAGTGGCAGAAACTGTTTTCAGAGATAGGAAGAGAAAATTACCTTTGGAACTTACAG
                                                                                                                             AGGAAATACAAGAAGATGAÄGACAATGACATGGAAGGTCCAGATATAGATGTTCAGGATG
                                                                                                                                                                      TTTTGGTATTACATGATGTTGATTTAATAATATCTCATGTGGAAAATAATATGCACATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGAAAGGAAAAGCAAATATTATATTCTCATATGTAAGAGCCATTGGAATACCAGAGCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTTTTAGTGAAGTGAAATATATTACCAACCTGGAAGACCTTCAGAACATAGAAAATGCTC
                                         TGGAACTAACAGAAGAAACATTTAATGCAACAGTGATGGCTTCTGACAGCATAGTACTCT
                                                                                                                                                 1440
                                                                                                                                                                       1380
                                                                                                                                                                                                               1320
                                                                                                                                                                                                                                                        1260
                                                                                                                                                                                                                                                                             1260
                                                                                                                                                                                                                                                                                                                                                              1140
                                                                                                                                                                                                                                                                                                                                                                                                        1080
                                                                                                                                                                                                                                                                                                                                                                                                                            1020
  1620
                                                              1560
                                                                                    1500
                                                                                                                             1440
                                                                                                                                                                                                                                   1320
                                                                                                                                                                                                                                                                                                  1200
                                                                                                                                                                                                                                                                                                                     1200
                                                                                                                                                                                                                                                                                                                                          1140
                                                                                                                                                                                                                                                                                                                                                                                   1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                 1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  660
                                           1560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          600
```

_	A 2760	701 CTCTGAGAATAAAGCATTGGAATAGAAGTAATTGGTTTAAAGAAGCAGAAAAATCATTT	Qу 2
	I A 2700		Db 2
	A 2700	2641 AGGAGAATGATAAGGAACAACATGAAGATAAATCGGCAGTCAGAAAAGAACCGATTGAA	Qy 2
	C 2640	2581 CCGCAACATCTCAACGTGGCACTAGGAAAGTTCCCAAGTGTATGAAAGAAA	pb 2
		21	_
		_	Qy 2
	T 2520	2461 AAAACCTTGTATTGTGGCTGAAGAAATTAGAAGCAGGACTAGAAAATCATATCACAATTT	D Qy
	G 2460 2460	2401 TGAATCTGCATTCAGGTGGCCAAGTATTTGCATTTCCTTCAGACCAGGCTATAATTGAAG	p 04
			N
	G 2400	341	Qy 2
	G 2340 2340	2281 AGCAGAAATACTTGGATTCATTFACTCCATGCTGGTTAAATCTAAAGAATACTCCAGTGG	Qy 2: Db 2:
	A 2280 A 2280	2221 TTTTGTTCAGTGATGGCACTGTAAATCCTCAATATAAAAAAGCAATATTGACACTGGTAA 	Оу 2: Db 2:
	A 2220	2161 TTCCGGAAATCACTGTGGAAAATCTTCCCAGTTATTTCAGACTTCAGAAACCATTATTG	0у 2
	T 2160 T 2160	2101 TAGCTAGCACACATGCACAAGACATAGTTCAAATAACAGATGCACTACTGGAAATGT	Oy 2 Db 2
	C 2100 C 2100	2041 CAAGTCTTCCAGCCCTGCTGCTGCCAGACACACAGAAGGCAAAATAGAGAGAG	Qy 21 Db 21
	G 2040 G 2040	1981 ATGTTATCACTGGAATTTATTCTGAAGAAGATGTTTTGCTACTGTCAACCAAATATGCTG 	Qy 1:
	T 1980 T 1980	1921 GTCCAACCATGAAAACAGCAAAAGAAGATTTTAGTGAAGCAGGAAACTACCTAAAAGGAT 	Qy 1:
	A 1920 A 1920	1861 GTGGGGAATTATATAAAGACCTCATCTTGTATTCTAGTGTGTCAGTATTTGGGACTATTTA 	Oy 1:
	A 1860 A 1860	1801 TCAACAGGATTTCATATCCAGTGAATATAACATCGATCCAAGAAGCAGAAGAATATTTAA 	Оу 1 рь 1
	C 1800 C 1800	1741 AGAACCCAGTATCTTATGCTGGAATGTTAGGAACCAAAGATCTCCTAAAATTTATCCAGC	Qy 1 Db 1
	G 1740 G 1740	1681 ATGTATGTACTAAGCAAAATGTTACTGAATTTCCTATCATAAAGATGTACAAGAAAGGCG	Qy 1 Db 1
	G 1680 G 1680	1621 TTAAACTGAAAGGCACATCTACTATGCTTCTTACTAGAATAAACTGTGCAGATTGGTCTG	

																	,		
Qy	Db	Qy	Qy	Оу	Qy Db	Db	Qy Db	. Qy	Qy Db	Qy Db	Qy Db	Оу	Оу	Qy Db	Qy Db	Оγ	Qy Db	Qy Db	Db
3781	3721	3721	3661 3661	3601 3601	3541 , 3541	3481	4 4	ω ω	3301 3301	NN	3181 3181	3121 3121	3061 3061	3001	2941 2941	2881 2881	2821 2821	2761 2761	2701
AATTTCAGATTGAACAGGGATTCAGCATTCTGCCATCTCCTCATGGAAAGAGAGGCTCCC 3	TTATATTTTAAGTGAGTCTTAAAACCTCCTCTTATTTCTACAAGTTATATGGCTA	ATATTTATATTTTAAGTGAGTCTTAAAACCTCCTCTTATTTCTACAAGTTATATGGCTA 3	CTTGATCTTTTCTAATATTTTCAGAAAGTGATGGGATAACCCTAGAAGAGGACTCAGAAT 3 	AATTTTGGCTATTAAAGATATGTATTAGATGGTCTTATCCTGATTATTACCTGGATACAA 3	ACCTGTGGCAGACTAGGTTTCCAGAATTTCCTGGTTCTGCTCACGTATCATGTTTGAAAA 3	GTGTTAAAAGTA 3 	GTCAGTACAGGCCATGGATCCTGCTAAATAACCTGCATTGGACAGCGCCCCACAACAA 3 	ATTTAGCAATTGTCGGGACACATTTTTGATGTCATGACTAGGGCAGTTATTGACATT 3 	ACAGTTATATTGGTTTTATTGGAGTCATGATATTAAAATCAGCGTTTGTCAACCTCAGGG 3	ATTTGGATTAAAATTAAACTCTAATCACAGTTAACTCCACAGTGCATTCATGCAGCTG 3 	ATTGGACAGTTCAGTACTAGACAAAAACTAGCATAATTAACTTAGTTCTAGCCATGATTT 3	CTTACTTCCGAGTAGCCATATTTCAAGTGTTCATTGCCACATGTGGCCTGTGACTACTGT 3	TACATCCTTTTTTGTACCAAGTCTTCTAAATGCAGTACATATTTTATACTTACT	ACTITICACCCAGTAGTATACCCAAAATAGCGAAATATAGAAATTATTAATGAGATATIT 3 	ATTITCTAGTAACTACATTAAACAAAGTAAAAGTGAGCAGGGCAAAATAATTITGATAIT 3	AAGTTTGCAGACTAGTGCCATCCAATAGAATTATAATATAAGTCACATATTTTATTTA	AAATTTTTTGGCATGATAGACITAATTTATTTCCTTAAAGAATAATATTAAATCATITC 2 	GACGTGATAAAGAGTTAGGATGCTCAAAAGTGAACTAATTTTATAGGGCTGTGGTTTCCA 2 	
840	780	780	720 720	660	600	540	. co co	420 420	360 360	300	240 240	180 180	120 120	060	000	940 940	088	820 820	760
										*									

```
RESULT 2
AAH15799
ID AAH1
XX AAH1
AC AAH1
XX Huma
XX Huma
XX Huma
XX Huma
XX Homc
XX Homc
XX Homc
XX PN EP1(
XX EP1(
X
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В. 5
8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          рЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
29-JUL-1999;
27-AUG-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3841
                                                                28-JUL-2000;
                                                                                                         07-FEB-2001
                                                                                                                                                                                                                                      Human;
                                                                                                                                                                                                                                                                               Human
                                                                                                                                                                                                                                                                                                                        26-JUN-2001
                                                                                                                                                                                                                                                                                                                                                                                                        AAH15799
                                                                                                                                                                                             Ното
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGAATACCTTCAAAAAAAAAAAAAAAA 4526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAATGAGAGTGAACTCTAAATATAGGTTGTAGTAATAAAACATCATTAGCCTAATTATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTGTAGCATGTGATGCCTGATTAAACTCATTTTCATTTTGCTTTTATTTTCTAATATGGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTTTTAATATCTACTTGATATCTTGTTCTTTAAATTTTCTTCACATATGGTTTGCCTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGAGCCACACGGCCTCATTCTGTGAGGGAGGGGAAAGATTAGCCCAAAGAGTTAATTTTCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTGTAGCATGTGATGCCTGATTAAACTCATTTTCATTTGCTTTTATTTTCTAATATGGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACAACTGATTTTTATAACTGAAATTTAAGGAATCTAACAGCTAAAACTCAGTAAGTGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCATCTGAAGCGTCTCTGAAATCTACCCTTGCAAGCTTCAGACAAATCAGTTGATCTCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AATTTCAGATTGAACAGGGATTCAGCATTCTGCCATCTCCTCATGGAAAGAGGGCTCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGAATACCTTCAAAAAAAAAAAAAAAA 4526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MTATTTCCTTATAACATAGACCCGTTGCTACTCTCAGCACCCTCTCCTCAATTTTTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACAACTGATTTTTATAACTGAAATTTAAGGAATCTAACAGCTAAAACTCAGTAAGTGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGAGCCACACGGCCTCATTCTGTGAGGGAAGGGAAAGATTAGCCAAAGAGTTAATTTTCAT
                                                                                                                                                                                                                                                                               CDNA
                                                                                                                                                                                                                                    primer;
                                                                                                                                                                                                                                                                                                                                                                                                      standard;
                                                                                                                                                                                                                                                                             sequence
                                                                2000EP-0116126
                                                                                                                                                                                                                                                                                                                        (first
  99JP-0248036
99JP-0300253
                                                                                                                                                                                                                                      detection;
                                                                                                                                                                                                                                                                             SEQ ID NO:14261.
                                                                                                                                                                                                                                                                                                                      entry)
                                                                                                                                                                                                                                                                                                                                                                                                        2820
                                                                                                                                                                                                                                    diagnosis;
                                                                                                                                                                                                                                                                                                                                                                                                        ВP
                                                                                                                                                                                                                                    antisense
                                                                                                                                                                                                                                  therapy;
                                                                                                                                                                                                                                  gene
                                                                                                                                                                                                                                    therapy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3840
```

Best Local Similarity Matches 2814; Conserv

62.1%; nilarity 99.8%; Conservative

Pred. No. 0; 1; Mismatches Score

5 22;

Indels Length

0; Gaps

0

2811.6; ç;

1686 TGTACTAAGCAAAATGTTACTGAATTTCCTATCATAAAGATGTACAAGAAAGGCGAGAAC 1745

CCAGTATCTTATGCTGGAATGTTAGGAACCAAAGATCTCCTAAAATTTATCCAGCTCAAC

1805

1746

61

121

181

Query Match

Sequence

2820

BP;

911 A; 496 C;

504

909

T; 0 other; DΒ

Qy 멍 Qy 밁 δÃ 밁 Q B Qy Ъ Qγ 밁 δÃ

301

ATCACTGGAATTTATTCTGAAGAAGATGTTTTGCTACTGTCAACCAAATATGCTGCAAGT

CTTCCAGCCCTGCTTGCCAGACACACAGAAGGCAAAATAGAGAGCATCCCACTAGCT

2105

360

1925

180 1865 120

240

1985

300

AGGATTTCATATCCAGTGAATATAACATCGATCCAAGAAGCAGAAGAATATTTAAGTGGG

```
CC complementary strand of a polynucleotide which comprises a 5'-end CC sequence and an oligonucleotide comprises a sequence complementary to a C polynucleotide which comprises a 3'-end sequence, where the CC oligonucleotide comprises at least 15 nucleotides and the combination of the 5'-end sequence/3'-end sequence is selected from those defined in CC the 5'-end sequence/3'-end sequence is selected from those defined in CC the specification. The primer sets can be used in antisense therapy and CC in gene therapy. The primers are useful for synthesising polynucleotides, CC particularly full-length cDNAs. The primers are also useful for the CC detection and/or diagnosis of the abnormality of the proteins encoded by CC the full-length cDNAs. The primers allow obtaining of the full-length CC cDNAs easily without any specialised methods. AAH03166 to AAH13628 and CC AAH3583 To AAH18742 represent human cDNAs sequences; AAAB92446 to CC CAAB958B3 represent oligonucleotides, all of which are used in the exemplification of the present invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              11-JAN-2000;
02-MAY-2000;
09-JUN-2000;
                                                                                                                                                                                                                                                                                                                                   The present invention describes primer sets for synthesising 5602 full-length cDNAs defined in the specification. Where a primer set comprises: (a) an oligo-dT primer and an oligonucleotide complementary to the complementary strand of a polynucleotide which comprises one of the 5602 nucleotide sequences defined in the specification, where the oligonucleotide comprises at least 15 nucleotides; or (b) a combination of an oligonucleotide comprising a sequence complementary to the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Primer sets for synthesizing polynucleotides, particularly the 5602 full-length cDNAs defined in the specification, and for the detection and/or diagnosis of the abnormality of the proteins encoded by the full-length cDNAs -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (HELI-) HELIX RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Isogai T,
, Sugiyama
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2000JP-0118776.
2000JP-0183767.
2000JP-0241899.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   14261;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           INST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ţ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Nishikawa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                hikawa T,
Wakamatsu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2537pp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Hayashi
A, Naga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ROM;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ashi K, :
Nagai K,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Saito K,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Т;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Yamamoto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     J.
```

500 ·	126 TICCGAGTAGCCATATITCAAGTGITCATTGCCACATGIGGCCIGTGACTGACTGIATIGG 31	Qy 3 Db 1
L25 L40	066 CCTTTTTGTACCAAGTCTTCTAAATGCAGTACATATTTTATACTTACT	Qу 3 Db 1
)65 180	006 TCACCCAGTAGTATACCCAAAATAGCGAAATATAGAAATTATTAATGAGATATTTTACAT 30 	Оу 3 Db 1
)05 320	946 CTAGTAACTACATTAAACAAGTAAAAGTGAGCAGGGCAAAATAATTTTGATATTACTTT 30 	Оу 2 рь 1
945 260	1886 TGCAGACTAGTGCCAŤCCAATAGAATTATAATATAAGTCACATATTTTATTT	Qy 2 Db 1
385 200	826 TTTTTGGCATGATAGACTTAATTTATTTCCTTAAAGAATAATATTAAATCATTTCAAGTT 28 	Qy 28 Db 11
325 L40	66 GATAAAGAGTTAGGATGCTCAAAAGTGAACTAATTTTATAGGGCTGTGGTTTCCAAAATT 28 	Qy 27 Db 10
765)80	7706 AGAATAAAGCATTGGAATAGAAGTAATTGGTTTAAAGAAGCAGAAAAATCATTTAGACGT 27 	Qy 2 Db 1
705	646 AATGATAAGGAACAACATGAAGATAAATCGGCAGTCAGAAAAGAACCGATTGAAACTCTG 27 	Qy 2
64.5 50	586 ACATCTCAACGTGGCACTAGGAAAGTTCCCAAGTGTATGAAAGAAA	Qy 2 Db
585)()	526 GCTCAAGAATGGAAACCTCCTCTTCCAGCTTATGATTTTCTAAGTATGATAGATA	Qy 2 Db
525 10	466 CTTGTATTGTGGCTGAAGAAATTAGAAGCAGGACTAGAAAATCATATCACAATTTTACCT 25 	Qy 2.
165	406 CTGCATTCAGGTGGCCAAGTATTTGCATTCCTTCAGACCAGGCTATAATTGAAGAAAAC 24 	Qy 2
405 20	346 GGAATCTTGCGGGCAFATITTGATCCTCTGCTCCCCTTCCTCTTGTTTTTGGTGAAT 24 	Qy 2 Db
345 50	236 AAATACTTGGATTCATTTACTCCATGCTGGTTAAATCTAAAGAATACTCCAGTGGGGAGA 23 	Qy 2 Db
285	226 TTCAGTGATGGCACTGTAAATCCTCAATATAAAAAGCAATATTGACACTGGTAAAGCAG 22 	Qy 2 Db
225	166 GAAATCACTGTGGAAAATCTTCCCAGTTATTTCAGACTTCAGAAACCATTATTGATTTTG 22 	Qy 2 Db
10	1106 AGCACACATGCACAAGACATAGTTCAAATAATAACAGATGCACTACTGGAAATGTTTCCG 21	Qy 2 Db
20	361 CTTCCAGCCCTGCTTGCCAGACACACAGAAGGCAAAATAGAGAGCATCCCACTAGCT 42	Db

	TCCTTATAACATAGACCCGTTGCTACTCTCAGCACCCTCCTCAATTTTTTTCCTGTA	2521	Db	
ა i		ن ز		
4205 2520	TGATTTTTATAACTGAAATTTAAGGAATCTAACAGCTAAAACTCAGTAAGTGCATMTATT	4146 2461	Dh Dh	
2460	AATATCTACTTGATATCTTGTTCTTTAAATTTTCTTCACATATGGTTTGCCTGATACAAC	2401	Db	
4145	ATATCTACTTGATATCTTGTTCTTTAAATTTTCTTCACATATGGTTTGCCTGATACAAC	4086	Qy	
2400	CATTITIGAGACATTIGITGAGAATATTCTATTIGGTGCTCTACTGTATTTTCTTTTT	2341	Db	
4085	ATTTTTTGAGACATTTGTTGAGAATATTCTATTTGGTGCTCTACTGTATTTTTTTT	4026	Qy	
34	ATCACTTAGCTGTTAGACTGATCTGTTTGTAGCAGTTGTTTGT	28	Db	
	ҭҪѦҪҭҭѦӓҪҭҁҡҭҭѧҁѧҀҭҁѧҭҁҭҁҭҭҡҁҭѧҁҁѧҁҭҭҁҭҭҁҭҁҭҁҡҁҭҭҭҭҁҁҁҡҁтҁ	96	0	
2280	CACACGCCTCATTCTGTGAGGGAGGGAAGATTAGCCAAAGAGTTAATTTTCATTCCACCGCCTCATTCTGTGAGGGAGG	3906 2221	Оу	
22	GAAGCGTCTCTGAAATCTACCCTTGCAAGCTTCAGACAAATCAGTTGATCTCCCTGAGC	16	Db	
3905	GCGTCTCTGAAATCTACCCTTGCAAGCTTCAGACAAATCAGTTGATCTCCCTGAGC	00	Qy	
3845 2160	CAGATTGAACAGGGATTCAGCATCTGCCATCTCCTCATGGAAAGAGGGCTCCCTCATC	2101	ДУ	
. 1	TATATTTTAAGTGAGTCTTAAAACCTCCTCTTATTTCTACAAGTTATATGGCTAAATTT	04	_ Db	
78	TTATATTTTAAGTGAGTCTTAAAACCTCCTCTTATTTCTACAAGTTATATATGGCTAAATTT	72	Qy	
2040	CTTTTCTAATATTTTCAGAAAGTGATGAGGACCCTAGAAGAGGACTCAGAATGATAT	1981	Db	
3725	GATAT	3666	. Оу	
1980	TOUCLALL PARKAL AND LANGE LOSS TO LANGE CONTINUES OF THE CONTINUES OF TH	1921	סט עץ	
0			} {	
3605 1920	TGGCAGACTAGGTTTCCAGAATTTCCTGGTTCTGCTCACGTATCATGTTTGAAAAAATTT TGGCAGACTAGGTTTCCAGAATTTCCTGGTTCTGCTCACGTATCATGTTTTGAAAAAATTT TGGCAGACTAGGTTTCCAGAATTTCCTGGTTCTGCTCACGTATCATGTTCAAAAAATTTT	3546 1861	Qy Db	
6	CTGCCCGAAATGGTAGTCGTGCCAAGGCTGAGTAACCTTGTGTTAAAAGTAACCTG		Db	
3545	ATCCTGCCCGAAATGGTAGTCGTGCCAAGGCTGAGTAACCTTGTGTTAAAAGTAACCTG	3486	Qy	
80		74	Db	
3485	AGGCCATGGATCCTGCTAAATAACCTGCATTGGACAGCGCCCCCACAACAAAGAAT	3426	 0у	
1740	TAGCAATTGTCGGGAGACATTTTGATGTCATGACTAGGGCAGTTATTGACATTTAGTG	1681	Дb	
3425	TAGCAATTGTCGGGAGACATTTTTGATGTCATGACTAGGGCAGTTATTGACATTTAGTG	3366	Qy	
1680	TATATTTGTTTTATTGGAGTCATGATATTAAAATCAGCGTTTGTCAACCTCAGGGGATAT	1621	Db	
3365	ATATTTGTTTTATTGGAGTCATGATATTAAAATCAGCGTTTGTCAACCTCAGGGGATAT	3306	Оу	
1620	TGGATTAAAATTAAACTCTAATCACAGTTAACTCCACAGTGCATTCATGCAGCTGACAGT		Db	
3305	GGATTAAAATTAAACTCTAATCACAGTTAACTCCACAGTGCATTCATGCAGCTGACAGT	3246	Qy	
1560	ACAGTTCAGTACTAGACAAAAACTAGCATAATTAACTTAGTTCTAGCCATGATTTCTATT	1501	Db	
3245	AGTTCAGTACTAGACAAAAACTAGCATAATTAACTTAGTTCTAGCCATGATTTCTATT	3186	Qy	

```
RESULT 3
ABV21967
ID ABV2
XX ABV2
XX ABV2
XX ABV2
XX Huma
XX Huma
XX Homo
XX H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                   (a) assessing whetl
(b) monitoring the
(c) assessing the ecancer in a patient
(d) assessing the ein a patient;
(e) selecting a com
(f) assessing the patient;
(g) determining when the patient;
(l) assessing the patient;
(l) is also useful
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     16-MAR-2000;
25-MAY-2000;
09-JUN-2000;
                                                                                                                                                                                                           The invention relates to an isolated nucleic acid molecule (I) com a nucleotide sequence given in Tables 1-9 (ABV00010-ABV62213) of t specification or its complement. (I) is useful for:
(a) assessing whether a patient is afflicted with prostate cancer;
(b) monitoring the progression of prostate cancer in a patient;
(c) assessing the efficacy of a test compound to inhibit prostate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2641
                                                                                                                                                                                                                                                                                                                                                                      Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           18-JUL-2000;
13-DEC-2000:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Human; prostate pharmacogenomic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2581
                                                                                                                                                                                                                                                                                                                                                                                                                                      prostate
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Novel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       17-FEB-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               20-FEB-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         23-AUG-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO200160860-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ABV21967
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (MILL-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           13-SEP-2002
                                                             selecting a composition for inhibiting prostate cancer is assessing the prostate cell carcinogenic potential of a determining whether prostate cancer has metastasized in assessing the aggressiveness or indolence of prostate ca
                                                                                                                                                                                                                                                                                                                                                                                                             detecting
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2001-662795/76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGCTAATTAAGTACCAGCACATAGAAACATGAAATTGCTTAGTCATTGTACCTTTGTCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCATGTGATGCCTGATTAAACTCATTTCATTTGCTTTTATTTCTAATATGGGAACAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 prostate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MILLENNIUM PREDICTIVE
                                                                                                                                                                                                                                                                                                                                                                                                           plated nucleic acid molecule associated with cancerous stains and correlating with presence of prostate cancer, stage of prostate cancer.
                                                                                                                                                                                                                                                                                                                                                                      Page
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            standard;
                                                                                                                                                                   a patient; sing the efficacy of a therapy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2000US-183319P.
2000US-189862P.
2000US-207454P.
2000US-211314P.
2000US-211314P.
2000US-255281P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Endege
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2001WO-US05171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (first
                                                                                                                                                                                                                                                                                                                                                                      3747;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     marker;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 expression marker
                          as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cDNA;
                                                                                                                                                                                                                                                                                                                                                                      11750pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                          ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cytostatic;
                        pharmacodyanamic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gene;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Monahan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDICINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         carcinogen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 21958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        INC
                                                                                                                                                                        for inhibiting
                          or
                        pharmacogenomic
                                                                                                       rostate cancer in potential of a co
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       pharmacodyanamic
                                                                                                                                                                        prostate cancer
                                                                  cancer
                                                                                      compound;
a patient;
                                                                                                                                                                                                                                                                                                                                                                                                                cancer
                                                                                                                              a patient;
                                                                                                                                                                                                                                                                                                      ) comprising of the
                                                                                                                                                                                                                                                                                                                                                                                                                    useful
cer -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         marker
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2700
                                                                                                                                                                                                                                                                                                                                                                                                                                                          of
```

Ç

```
В
               ΔÃ
                                          Вb
                                                            γQ
                                                                                    망
                                                                                                       QΥ
                                                                                                                            Дb
                                                                                                                                                 Qy
                                                                                                                                                                        DЬ
                                                                                                                                                                                            Qy
                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                     Qy
                                                                                                                                                                                                                                                           ₽
                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                                                               B
                                                                                                                                                                                                                                                                                                                                                               Qy
                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                            Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                  뭥
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best Local Similarity Matches 2627; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local
                      2624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1724
                                                                                                         2504
                                                                                                                                                    2444
                                                                                                                                                                                              2384
                                                                                                                                                                                                                                       2324
                                                                                                                                                                                                                                                                                 2264
                                                                                                                                                                                                                                                                                                                           2204
                                                                                                                                                                                                                                                                                                                                                                    2144
                                                                                                                                                                                                                                                                                                                                                                                                              2084
                                                                                                                                                                                                                                                                                                                                                                                                                                                       2024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1664 CTGTGCAGATTGGTCTGATGTATGTACTAAGCAAAATGTTACTGAATTTCCTATCATAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                           618
                                           918
                                                                                                                                                                         738
                                                                                                                                                                                                                   678
                                                                                                                                                                                                                                                                                                                                                                                          438
                                                                                                                              798
                                                                                                                                                                                                                                                                                                                                                 498
                                                                                                                                                                                                                                                                                                                                                                                                                                   378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         138
                                                                                                                                                                                                                                                                                                       558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           18
GAAAGAAACAGATGTGCAGGAGAATGATAAGGAACAACATGAAGATAAATCGGCAGTCAG
                                                                                                                                           CCAGGCTATAATTGAAGAAAACCTTGTATTGTGGCTGAAGAAATTAGAAGCAGGACTAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GATGTACAAGAAAGGCGAGAACCCAGTATCTTATGCTGGAATGTTAGGAACCAAAGATCT
                                                     TCTAAGTATGATAGATGCCGCAACATCTCAACGTGGCACTAGGAAAGTTCCCCAAGTGTAT
                                                                                               AAATCATATCACAATTTTACCTGCTCAAGAATGGAAACCTCCTCTTCCAGCTTATGATTT
                                                                                                                                                                                   TCCTCTTCTTGTTTTGGTGAATCTGCATTCAGGTGGCCAAGTATTTGCATTTCCTTCAGA
                                                                                                                                                                                                                             AAAGAATACTCCAGTGGGGAGAGGAATCTTGCGGGCATATTTTGATCCTCTGCCCCT
                                                                                                                                                                                                                                                          AATATTGACACTGGTAAAGCAGAAATACTTGGATTCATTTACTCCATGCTGGTTAAATCT
                                                                                                                                                                                                                                                                                                    TCAGAAACCATTATTGATTTGTTCAGTGATGGCACTGTAAATCCTCAATATAAAAAAGC
                                                                                                                                                                                                                                                                                                                                                TGCACTACTGGAAATGTTTCCGGAAATCACTGTGGAAAATCTTCCCAGTTATTTCAGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                             AAACTACCTAAAAGGATATGTTATCACTGGAATTTATTCTGAAGAAGATGTTTTGCTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCTAAAATTTATCCAGCTCAACAGGATTTCATATCCAGTGAATATAACATCGATCCAAGA 1843
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCGTGCAGATTGGTCTGATGTATGTACTAAGCAAAATGTTACTGAATTTCCTATCATAAA
                                                                                     AAATCATATCACAATTTTACCTGCTCAAGAATGGAAACCTCCTCCTCCAGCTTATGATTT
                                                                                                                                CCAGGCTATAATTGAAGAAAACCTTGTATTGTGGCTGAAGAAATTAGAAGCAGGACTAGA
                                                                                                                                                                         TCCTCTTCTTTTTGGTGAATCTGCATTCAGGTGGCCAAGTATTTGCATTTCCTTCAGA
                                                                                                                                                                                                                   AAAGAATACTCCAGTGGGGAGAGGAATCTTGAGGGCATATTTTGATCCTCTGCCTCCCCT
                                                                                                                                                                                                                                                                                                                                                                                         AGTATTGGGACTATTTAGTCCAACCATGAAAACAGCAAAAGAAGATTTTAGTGAAGCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GATGTACAAGAAAGGCGAGAACCCAGTATCTTATGCTGGAATGTTAGGAACCGAAGATCT
                                            TCTAAGTATGATAGATGCCGCAACATCTCAACGTGGCACTAGGAAAGTTCCCCAAGTGTAT
                                                                                                                                                                                                                                                                                                                                                                                                               AATAGAGAGCATCCCACTAGCTAGCACACATGCACAAGACATAGTTCAAATAATAACAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAACTACCTAAAAGGATATGTTATCACTGGAATTTATTCTGAAGAAGATGTTTTGCTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGTATTGGGACTATTTAGTCCAACCATGAAAACAGCAAAAGAAGATTTTAGTGAAGCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              56.1%;
97.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Α;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2540.4
No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Η.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     62;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10;
                                                                                                                                                                                                                                                                                                                                                                                           497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         197
                                                                 2623
                                                                                                          2563
                                                                                                                                                                                              2443
                                                                                                                                                                                                                                        2383
                                                                                                                                                                                                                                                                                 2323
                                                                                                                                                                                                                                                                                                                            2263
                                                                                                                                                                                                                                                                                                                                                                     2203
                                                                                                                                                                                                                                                                                                                                                                                                               2143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1963
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             77
                                              977
                                                                                      917
                                                                                                                                 857
                                                                                                                                                                           797
                                                                                                                                                                                                                                                               677
                                                                                                                                                                                                                                                                                                       617
                                                                                                                                                                                                                                                                                                                                                 557
                                                                                                                                                                                                                                                                                                                                                                                                                                    437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1903
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    137
                                                                                                                                                                                                                    737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1783
```

```
밁
           δõ
                       д
У
                                                       당 : 9
                                                                                     ф
                                                                                                     Ωy
                                                                                                                     B 64
                                                                                                                                                      DЬ
                                                                                                                                                                                     В
                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                DЬ
                                                                                                                                                                                                                                                             δõ
                                                                                                                                                                                                                                                                                Вρ
                                                                                                                                                                                                                                                                                           δõ
                                                                                                                                                                                                                                                                                                           B 64
                                                                                                                                                                                                                                                                                                                                        DЪ
                                                                                                                                                                                                                                                                                                                                                        VΩ
                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                       δõ
                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                      Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                   δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Д
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                 QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ωy
              3704
                              1998
                                            3644
                                                                                          1878
                                                                                                                         1818
                                                                                                                                       3464
                                                                                                                                                        1758
                                                                                                                                                                      3404
                                                                                                                                                                                      1698
                                                                                                                                                                                                    3344
                                                                                                                                                                                                                     1638
                                                                                                                                                                                                                                    3284
                                                                                                                                                                                                                                                   1578
                                                                                                                                                                                                                                                                   3224
                                                                                                                                                                                                                                                                                1518
                                                                                                                                                                                                                                                                                                3164
                                                                                                                                                                                                                                                                                                                1458
                                                                                                                                                                                                                                                                                                                               3104
                                                                                                                                                                                                                                                                                                                                              1398
                                                                                                                                                                                                                                                                                                                                                            3044
                                                                                                                                                                                                                                                                                                                                                                            1338
                                                                                                                                                                                                                                                                                                                                                                                                          1278
                                                                                                                                                                                                                                                                                                                                                                                                                          2924
                                                                                                                                                                                                                                                                                                                                                                                                                                         1218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1158
                                                            1938
                                                                          3584
                                                                                                          3524
                                                                                                                                                                                                                                                                                                                                                                                            2984
                                                                                                                                                                                                                                                                                                                                                                                                                                                         2864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1038
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2684
                                                                                                                                                                                                                  GTGCATTCATGCAGCTGACAGTTATATTTGTTTTATTGGAGTCATGATATTAAAATCAGC
                                                                                                                                                                                                                                                                                                                                                                                                         CACATATTTTATTTAAAATTTTCTAGTAACTACATTAAACAAAGTAAAAGTGAGCAGGGC
                                                          CGTATCATGTTTGAAAAAATTTTTGGCTATTAAAGATATGTATTAGATGGTCTTATCCTGA
                                                                                                                        ACAGCGCCCACAACAAAGAATTATCCTGCCCGAAATGGTAGTCGTGCCAAGGCTGAGTA
                                                                                                                                                     GGGCAGTTATTGACATTTAGTGAGTAGAGGCCATGGATCCTGCTAAATAACCTGCATTGG
                                                                                                                                                                                             GTTTGTCAACCTCAGGGGATATTTAGCAATTGTCGGGGAGACATTTTTGATGTCATGACTA
                                                                                                                                                                                                                                                 TGGCCTGTGACTACTGTATTGGACAGTTCAGTACTAGACAAAAACTAGCATAATTAACTT
                                                                                                                                                                                                                                                                                                             TTATACTTACTGCATTTCTTACTTCCGAGTAGCCATATTTCAAGTGTTCATTGCCACATG
                                                                                                                                                                                                                                                                                                                                                                          AGCAGAAAATCATTTAGACGTGATAAAGAGTTAGGATGCTCAAAAGTGAACTAATTTTA
       AGAAGAGGACTCAGAATGATATTTATATTTTAAGTGAGTCTTAAAACCTCCTCTTATTTC
                           TTATTACCTGGATACAACTTGATCTTTCTAATATTTTCAGAAAGTGATGGGATAACCCT
                                                                                         ACCTTGTGTTAAAAGTAACCTGTGGCAGACTAGGTTTCCAGAATTTCCTGGTTCTGCTCA
                                                                                                                                                                                                                                                                                                                                                    TTATTAATGAGATATTTTACATCCTTTTTTGTACCAAGTCTTCTAAATGCAGTACATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAAAGAACCGATTGAAACTCTGAGAATAAAGCATTGGAATAGAAGTAATTGGTTTAAAGA
AGAAGAGGACTCAGAATGATATTTATATTTTAAGTGAGTCTTAAAACCTCCTCTTATTTC
                                                                                                                                                                                      GTTTGTCAACCTCAGGGGATATTTAGCAATTGTCGGGAGACATTTTTGATGTCATGACTA
                                                                                                                                                                                                                                                                                                                                            TTATTAATGAGATATTTTACATCCTTTTTTGTACCAAGTCTTCTAAATGCAGTACATATT
                                                           1997
                                                                                          1937
                                           3703
                                                                                                        3583
                                                                                                                                       3523
                                                                                                                                                                                      1757
                                                                                                                                                                                                                   1697
                                                                                                                                                                                                                                                  1637
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1157
2117
                                                                          3643
                                                                                                                        1877
                                                                                                                                                                     3463
                                                                                                                                                                                                    3403
                                                                                                                                                                                                                                                                 3283
                                                                                                                                                                                                                                                                                              3223
                                                                                                                                                                                                                                                                                                               1517
                                                                                                                                                                                                                                                                                                                                                                            1397
                                                                                                                                                                                                                                                                                                                                                                                          3043
                                                                                                                                                                                                                                                                                                                                                                                                                                         1277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1097
                                                                                                                                                       1817
                                                                                                                                                                                                                                                                                1577
                                                                                                                                                                                                                                                                                                                             3163
                                                                                                                                                                                                                                                                                                                                             1457
                                                                                                                                                                                                                                                                                                                                                            3103
                                                                                                                                                                                                                                                                                                                                                                                                                          2983
                                                                                                                                                                                                                                                                                                                                                                                                                                                       2923
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2863
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2743
```

```
RESULT 4
ABV27799
ID ABV2
XX ABV2
XX Huma
XX Huma
XX Huma
KW Phall
XX WO2(
XX HOMC
XX 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δã
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ρy
                                                                                     17-FEB-2000;
16-MAR-2000;
25-MAY-2000;
09-JUN-2000;
18-JUL-2000;
13-DEC-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4124
                                                                                                                                                                                                                                                                                                                                                                                                                       Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4244
                  schlegel
                                                                                                                                                                                                                                                        23-AUG-2001
                                                                                                                                                                                                                                                                                            WO200160860-A2
                                                                                                                                                                                                                                                                                                                                Homo
                                                                                                                                                                                                                                                                                                                                                                Human; prostate pharmacogenomic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ABV27799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4064
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3884
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3764
                                                                                                                                                                                                                    20-FEB-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ABV27799;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             16-SEP-2002
                                                     MILL-) MILLENNIUM PREDICTIVE MEDICINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TATTTCTAATATGGGAACAATGAGAGTGAAGTCTAAATATAGGTTGTAGTAATAAAACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTCCTCAATTTTTTTCCTGTAGCATGTGATGCCTGATTAAACTCATTTTCATTTTGCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CATATGGTTTGCCTGATACAACTGATTTTATAACTGAAATTTAAGGAATCTAACAGCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAAGAGTTAATTTTCATTCCAAATCACTTAGCTGTTAGACTGATCTGTTTGTAGCAGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTTCTCAATTTTTTCC---TGTAATGTGATGCTTGATTAAA--CATTCTCATTGGGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                       prostate
                  ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   standard;
                                                                                     2000US-183319P.
2000US-189862P.
2000US-207454P.
2000US-211314P.
2000US-211314P.
2000US-219007P.
2000US-255281P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first
                  Endege
                                                                                                                                                                                                                    2001WO-US05171
                                                                                                                                                                                                                                                                                                                                                                                                                     expression marker
                                                                                                                                                                                                                                                                                                                                                                marker; gene; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cDNA;
                  ν<sub>O</sub>
                                                                                                                                                                                                                                                                                                                                                                                                                                                       entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ВP
                                                                                                                                                                                                                                                                                                                                                                                                                         CDNA 27790.
                                                                                                                                                                                                                                                                                                                                                                                     carcinogen;
                                                     INC
                                                                                                                                                                                                                                                                                                                                                                                     pharmacodyanamic
                                                                                                                                                                                                                                                                                                                                                                                     marker;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4063
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2707
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3943
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2177
```

2001-662795/76.

```
δ
                                                                                                                                ρy
                                                                                                                                                             B
                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                       γQ
                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         XXCCCCCCCCCCCCCXXXXX
 망
                   Q
                                                     В
                                                                                                           밁
                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                       Ъ
                                                                                                                                                                                                                                                                                                                           DЬ
                                                                                                                                                                                                                                                                                                                                              Qy
                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                     Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
Matches 2627; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                prostate
for detec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cancer in a patient;
(d) assessing the efficacy of a therapy for inhibiting prostate cancer in a patient;
(e) selecting a composition for inhibiting prostate cancer in a patient;
(f) assessing the prostate cell carcinogenic potential of a compound;
(g) determining whether prostate cancer has metastasized in a patient;
(h) assessing the aggressiveness or indolence of prostate cancer in a patient;
(I) is also useful as a pharmacodyanamic or pharmacogenomic marker.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The invention relates to an isolated nucleic acid molecule (I) comprising a nucleotide sequence given in Tables 1-9 (ABV00010-ABV62213) of the specification or its complement. (I) is useful for:

(a) assessing whether a patient is afflicted with prostate cancer;

(b) monitoring the progression of prostate cancer in a patient;

(c) assessing the efficacy of a test compound to inhibit prostate
                                                                                2204
                                                                                                                                     2144
                                                                                                                                                                                           2084
                                                                                                                                                                                                                                                                                                                                                        1904
                                                                                                                                                                                                                                                                                                                                                                                                             1844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Claim
                                                                                                                                                                                                                                              2024
                                                                                                                                                                                                                                                                                                   1964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1664 CTGTGCAGATTGGTCTGATGTATGTACTAAGCAAAATGTTACTGAATTTCCTATCATAAA 1723
 618
                                                      558
                                                                                                            498
                                                                                                                                                                438
                                                                                                                                                                                                                   378
                                                                                                                                                                                                                                                                         318
                                                                                                                                                                                                                                                                                                                                                                                                                                        138
                                                                                                                                                                                                                                                                                                                              258
                                                                                                                                                                                                                                                                                                                                                                                    198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               el isolated nucleic acid molecule associated with cancerous state of state cells and correlating with presence of prostate cancer, useful detecting presence of prostate cancer -
                                                                                                                                                             AATAGAGAGCATCCCACTAGCTAGCACACATGCACAAGACATAGTTCAAATAATAACAGA
                                                                                                                                                                                                                  GTCAACCAAATATGCTGCAAGTCTTCCAGCCCTGCTGCTGCCAGACACACAGAAGGCAA
                                                                                                                                                                                                                                                                                                                                                                                 AGCAGAAGAATATTTAAGTGGGGAATTATATAAAGACCTCATCTTGTATTCTAGTGTGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GATGTACAAGAAAGGCGAGAACCCAGTATCTTATGCTGGAATGTTAGGAACCAAAGATCT
AATATTGACACTGGTAAAGCAGAAATACTTGGATTCATTTACTCCATGCTGGTTAAATCT
                                                                   TCAGAAACCATTATTGATTTGTTCAGTGATGGCACTGTAAATCCTCAATATAAAAAAAGC
                                                                                                           CCTAAAATTTATCCAGCTCAACAGGATTTCATATCCAGTGAATATAACATCGATCCAAGA 1843
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCGTGCAGATTGGTCTGATGTACGTAAGCAAAATGTTACTGAATTTCCTATCATAAA
                                                                                                                                                                                                                                                                                                                             CCTAAAATTTATCCAGCTCAACAGGATTTCATATCCAGTGAATATAACATCGATCCAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GATGTACAAGAAAGGCGAGAACCCCAGTATCTTATGCTGGAATGTTAGGAACCGAAGATCT
                                                      TCAGAAACCATTATTGATTTTGTTCAGTGATGGCACTGTAAATCCTCAGTATAAAAAGC
                                                                                                                                                                                                                                                                                                                                                        AGTATTGGGACTATTTAGTCCAACCATGAAAACAGCAAAAGAAGATTTTAGTGAAGCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1; Page 5714-5715; 11750pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  56.1%;
ilarity 97.3%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         B₽;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         921 A; 509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 2540.4;
Pred. No. 0;
1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         G; 919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Τ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 23; Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    62;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    cancer in a patient;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2905;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                      197
                                                                                                                                                                                          2143
                                                                                                                                                                                                                                              2083
                                                                                                                                                                                                                                                                                                                                                        1963
                                                                                                                                                                                                                                                                                                                                                                                                             1903
 677
                                                      617
                                                                                                            557
                                                                                                                                                               497
                                                                                                                                                                                                                    437
                                                                                                                                                                                                                                                                         377
                                                                                                                                                                                                                                                                                                                                                                                  257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4.
```

```
RESULT 5
AAH05323
ID AAH0
XX
AC AAH0
XX
DT 26-J
XX
                                                                                                                                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                                                                                                                         DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   . ₽
                                                                                           δÃ
                                                                                                                                                           Qy
                                                                                                                                                                             밁
                                                                                                                                                                                           δõ
                                                                                                                                                                                                            В
                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                         δõ
                                                                                                                                                                                                                                                                          B
                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                        δõ
                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                       δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                               B 8
                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                               В
                                                                                                                                                                                                                              4064
                                                                                2648
                                                                                                                               4244
                                                                                                                                                               4184
                                                                                                                                                                                               4124
                                                                                                                                                                                                               2418
                                                                                                                                                                                                                                              2358
                                                                                                                                                                                                                                                             4004
                                                                                                                                                                                                                                                                             2298
                                                                                                                                                                                                                                                                                                            2238
                                                                                                                                                                                                                                                                                                                            3884
                                                                                                                                                                                                                                                                                                                                            2178
                                                                                                                                                                                                                                                                                                                                                            3824
                                                                                                                                                                                                                                                                                                                                                                            2118
                                                                                                                                                                                                                                                                                                                                                                                           3764
                                                                                                                                                                                                                                                                                                                                                                                                           2058
                                                                                                                                                                                                                                                                                                                                                                                                                          3704
                                                                                                                                                                                                                                                                                                                                                                                                                                          1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1758
        26-JUN-2001
                                                                                                                                               2537
                                                                                                                                                                                                                                                                                            3944
                                                                                                                                                                                                                                                                                                                                                                                                                                                         3644
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3584
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1878
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1818
                        AAH05323;
                                        AAH05323
                                                                                                                                                                             TTATTACCTGGATACAACTTGATCTTTTCTAATATTTTCAGAAAGTGATGGGATAACCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGGCAGTTATTGACATTTAGTGAGTAGAGGCCATGGATCCTGCTAAATAACCTGCATTGG
                                                                                              TATTTCTAATATGGGAACAATGAGAGTGAACTCTAAATATAGGTTGTAGTAATAAAACAT
                                                                                                                      CTCCTCAATTTTTTTCCTGTAGCATGTGATGCCTGATTAAACTCATTTTCATTTGCTTT
                                                                                                                                                      AAACTCAGTAAGTGCATMTATTTCCTTATAACATAGACCCGTTGCTACTCTCAGCACCCT
                                                                                                                                                                                                                                                                                                           TGGAAAGAGAGAGCTCCCTCATCTGAAGCGTCTCTGAAATCTACCCTTGCAAGCTTCAGAC
                                                                                                                                                                                                                                                                                                                                                                                   TACAAGTTATATGGCTAAATTTCAGATTGAACAGGGATTCAGCATTCTGCCATCCTCA
                                                                                                                                                                                                                                                                                                                                                                                                        ACAGCGCCCCACAACAAAGAATTATCCTGCCCGAAATGGTAGTCGTGCCAAGGCTGAGTA
                                                                               AAAGAGTTAATTTTCATTCCAAATCACTTAGCTGTTAGACTGATCTGTTTGTAGCAGTTG
                                                                                                                                                                                                                                                                                                                                                                          TACAAGTTATATGGCTAAATTTCAGATTGAACAGGGATTCAGCATTCTGCCATCTCCTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCTTGTGTTAAAAGTAACCTGTGGCAGACTAGGTTTCCAGAATTTCCTGGTTCTGCTCA
                                                                                                                CTTCTCAATTTTTTCC--
                                                                                                                                              AAACTCAGTAAGTGCATATATTTCCTTATAAATAGAACCGTTGGTATCTCAGA----CCT
                                                                                                                                                                                                                                                                                                                                           TGGAAAGAGAGGCTCCCTCATCTGAAGCGTCTCTGAAATCTACCCTTGCAAGCTTCAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCTTGTGTTAAAAGTAACCTGTGGCAGACTAGGTTTCCAGAATTTCCTGGTTCTGCTCA
                                       standard;
        (first
        entry)
                                       784
                                                                                                               TGTAATGTGATGCTTGATTAAA - - CATTCTCATTGGGCTT
                                       ВP
                                                                                               4363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         . 1997
                                                                                                               2647
                                                                                                                               4303
                                                                                                                                               2592
                                                                                                                                                              4243
                                                                                                                                                                              2536
                                                                                                                                                                                              4183
                                                                                                                                                                                                             2477
                                                                                                                                                                                                                                             2417
                                                                                                                                                                                                                                                             4063
                                                                                                                                                                                                                                                                             2357
                                                                                                                                                                                                                                                                                            4003
                                                                                                                                                                                                                                                                                                                           3943
                                                                                                                                                                                                                                                                                                                                           2237
                                                                                                                                                                                                                                                                                                                                                           3883
                                                                                                                                                                                                                                                                                                                                                                           2177
                                                                                                                                                                                                                                                                                                                                                                                          3823
                                                                                                                                                                                                                                                                                                                                                                                                          2117
                                                                                                                                                                                                                                                                                                                                                                                                                         3763
                                                                                                                                                                                                                                                                                                                                                                                                                                         2057
                                                                                                                                                                                                                                                                                                                                                                                                                                                        3703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1937
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1817
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3463
                                                                                                                                                                                                                              4123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1877
```

ρ

밁 Š

1686

Query Match Best Local Similarity Matches 778; Conserv

Conservative

0;

Score 776.2; DB 22; Pred. No. 2.9e-170; 0; Mismatches 6;

Indels Length

Gaps

0;

784; 0;

17.1%; 99.2%; A; 149

Sequence

784

B₽;

262

Ç;

148

G;

222 T;

3 other;

Q ₽

1806

61

121

AGGATTTCATATCCAGTGAATATAACATCGATCCAAGAAGCAGAAGAATATTTAAGTGGG

1865

120

CCAGTATCTTATGCTGGAATGTTAGGAACCAAAGATCTCCTAAAATTTTATCCAGCTCAAC

CCAGTATCTTATGCTGGAATGTTAGGAACCGAAGATCTCCTAAAATTTATCCAGCTCAAC

TGTACTAAGCAAAATGTTACTGAATTTCCTATCATAAAGATGTACAAGAAAGGCGAGAAC 1745

TGTACTAAGCAAAATGTTACTGAATTTCCTATCATAAAGATGTACAAGAAAGGCGAGAAC

60

```
The present invention describes primer sets for synthesising 5602 CC full-length cDNAs defined in the specification. Where a primer set CC comprises: (a) an oligo-dT primer and an oligonucleotide complementary to the complementary strand of a polynucleotide which complementary complementary strand of a polynucleotide which comprises one of the 5602 nucleotide comprises at least 15 nucleotides; or (b) a combination of an oligonucleotide comprises in a sequence complementary to the complementary strand of a polynucleotide which comprises a 5'-end complementary to a complementary complementary to a complementary complementary to a complementary complementary complementary complementary complementary complementary complementary complementary can be used in antisense therapy and complementary complementary can be useful for synthesising polynucleotides, particularly full-length cDNAs. The primers are useful for synthesising polynucleotides, comparison and complementary complementary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       11-JAN-2000;
02-MAY-2000;
09-JUN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Primer sets for synthesizing polynucleotides, particularly the 5602 full-length cDNAs defined in the specification, and for the detection and/or diagnosis of the abnormality of the proteins encoded by the full-length cDNAs -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ota T,
Ishii
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  29-JUL-1999;
27-AUG-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          07-FEB-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   28-JUL-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (HELI-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2001-318749/34.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cDNA clone (5'-primer)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  primer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Isogai T,
Sugiyama
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HELIX RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    99JP-0248036.
99JP-0300253.
2000JP-0118776.
2000JP-0183767.
2000JP-0241899.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ID 2158;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2000EP-0116126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    detection; diagnosis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               INST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Nishikawa T,
T, Wakamatsu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2537pp +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CD ROM;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Hayashi
A, Naga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ħ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Nagai K,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NO:2158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    antisense
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Saito K,
Otsuki
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  therapy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  therapy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      23
```

```
RESULT | ABW1221 | ID | ABW1221 | ID | ABW | ABW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                               17-FEB-2000;
16-MAR-2000;
25-MAY-2000;
09-JUN-2000;
                                                                                                                                                                                                                                                                                                                                                   Human; prostate pharmacogenomic
                                                                                                                                                                                                                                                                                                                                                                                                                     Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2046
                        18
13
                                                                                                                                                                              20-FEB-2001;
                                                                                                                                                                                                                         23-AUG-2001
                                                                                                                                                                                                                                                                  WO200160860-A2
                                                                                                                                                                                                                                                                                                             Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ABV12212 standard; cDNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1926
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  13-SEP-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTGCATTCAGGTGGCCAAGTATTTGCATTTCCTTCAGACCAGGCTATAATTGAAGAAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGCACACATGCACAAGACATAGTTCAAATAATAACAGATGCACTACTGGAAATGTTTTCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTTCCAGCCCTGCTTGCCAGACACACAGAAGGCAAAATAGAGAGCATCCCACTAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCATGAAAACAGCAAAAGAAGATTTTAGTGAAGCAGGAAACTACCTAAAAGGATATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAATTATATAAGAGCCTCATCTTGTATTCTAGTGTGTCAGTATTTGGGACTATTTAGTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGAATCTTGAGGGCATATTTTGATCCTCTGCCTNCCCTTCCTTCTTGNTTTGGTGAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGAATCTTGCGGGCATATTTTGATCCTCTGCCTCCCCTTCCTCTTCTTCTTTTTGGTGAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAAATCACTGTGGAAAATCTTCCCCAGTTATTTCAGACTTCAGAAACCATTATTGATTTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAAATCACTGTGGAAAATCTTCCCAGTTATTTCAGACTTCAGAAACCATTATTGATTTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATCACTGGAATTTATTCTGAAGAAGATGTTTTGCTACTGTCAACCAAATATGCTGCAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTGCATTCAGGTGGCCAAGTATTTGCATTTNCTTCAGACCAGGCTATAATTGAAGAAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGCACACATGCACAAGACATAGTTCAAATAATAACAGATGCACTACTGGAAATGTTTCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTTCCAGCCCTGCTTGCCAGACACACAGAAGGCAAAATAGAGAGCATCCCACTAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATCACTGGAATTTATTCTGAAGAAGATGTTTTGCTACTGTCAACCAAATATGCTGCAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                     prostate expression marker cDNA 12203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2469
                    2000US-183319P.
2000US-189862P.
2000US-207454P.
2000US-211314P.
2000US-211907P.
2000US-255281P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                (first entry)
                                                                                                                                                                              2001WO-US05171
                                                                                                                                                                                                                                                                                                                                                     cancer;
marker;
                                                                                                                                                                                                                                                                                                                                                                          cytostatic;
                                                                                                                                                                                                                                                                                                                                                     gene;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      360
                                                                                                                                                                                                                                                                                                                                                                            carcinogen;
                                                                                                                                                                                                                                                                                                                                                                          pharmacodyanamic
                                                                                                                                                                                                                                                                                                                                                                            marker;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1925
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2045
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     240
```

RESULT 7
ABV03043
IID ABV0
XX
ABV03043
AC ABV0
XX
DT 13-S
XX
DE Huma
XX
KW Huma
KW Huma
XX
OS Homo

(first

entry]

standard;

cDNA;

374

ВР

Human 13-SEP-2002 ABV03043; ABV03043

prostate

expression marker cDNA

3034

pharmacogenomic

prostate

marker;

gene; cytostatic;

carcinogen;

pharmacodyanamic marker;

```
δÃ
                                                  밁
                                                                        Q
                                                                                                     В
                                                                                                                            Ş
                                                                                                                                                        밁
                                                                                                                                                                               Š
                                                                                                                                                                                                           В
                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                            (c) assessing the efficacy of a test compound to inhibit prostate cancer in a patient;
(d) assessing the efficacy of a therapy for inhibiting prostate cancer in a patient;
(e) selecting a composition for inhibiting prostate cancer in a patient;
(f) assessing the prostate cell carcinogenic potential of a compound;
(g) determining whether prostate cancer has metastasized in a patient;
(h) assessing the aggressiveness or indolence of prostate cancer in a
                                                                                                                                                                                                                                                             The invention relates to an isolated nucleic acid molecule (I) comprising a nucleotide sequence given in Tables 1-9 (ABV00010-ABV62213) of the specification or its complement. (I) is useful for:

(a) assessing whether a patient is afflicted with prostate cancer;
(b) monitoring the progression of prostate cancer in a patient;
(c) assessing the efficacy of a test compound to inhibit prostate
                                                                                                                                                                                                                                      1785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Novel isolated nucleic acid molecule associated with cancerous state prostate cells and correlating with presence of prostate cancer, used for detecting presence of prostate cancer, stage of prostate cancer
                        2025
                                                                            1965
                                                                                                                                1905
                                                                                                                                                                                  1845
                                                                                                                                                                                                                                                                                                                                                                                             patient;
(I) is a
                                                                                                                                                                                                                                                                                                                                                                    Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (MILL-) MILLENNIUM PREDICTIVE MEDICINE
                                                                                                                                                         127
                                                                                                      187
307
                                                    247
                                                                                                                                                                                                            67
                                                                                                                                                                                                                                                                                                                              Local Similarity
                                                                                                                                                                                                         AACTACCTAAAAGGATATGTTATCACTGGAATTTATTCTGAAGAAGATGTTTTTGCTACTG
                                                                                                      GTATTGGGACTATTTAGTCCAACCATGAAAACAGCAAAAGAAGATTTTAGTGAAGCAGGA
                                                                                                                 GTATTGGGACTATTTAGTCCAACCATGAAAAAAAGAAGAAGAAGATTTTAGTGAAGCAGGA
                                                                                                                                                        AACTACCTAAAAAGGATATGTTATCACTGGAATTTATTCTGAAGAAGATGTTTTGCTACTG
                                                                                                                                                                                                                                                                                                                351;
                                                                                                                                                                                                                                                                                                                                                                                            also
                                                                                                                                                                                                                                                                                                                                                                    360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Page
                                                                                                                                                                                                                                                                                                                                                                                            useful as a
                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                    BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2006; 11750pp; English
                                                                                                                                                                                                                                                                                                                                                                   124
                                                                                                                                                                                                                                                                                                                              7.7%;
99.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                   A; 68 C;
                                                                                                                                                                                                                                                                                                                                                                                            pharmacodyanamic or pharmacogenomic marker.
                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                              Score 349.8;
Pred. No. 2.
                                                                                                                                                                                                                                                                                                                                                                    73 G;
                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                    94 T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          INC
                                                                                                                                                                                                                                                                                                                              .5e-71;
                                                                                                                                                                                                                                                                                                                                                                    1 other;
                                                                                                                                                                                                                                                                                                                                          DΒ
                                                                                                                                                                                                                                                                                                                                          23;
                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                                                                                                                                                                                                            360;
                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                1964
                                                                                                                                                                                                                                                                                       1784
                                                                                                      246
                                                                                                                                                                                                                                                                66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            of
```

0;

```
Ş
                                                                                                                         밁
                                                                                                                                            δÃ
                                                                                                                                                                  밁
                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                  밁
              Qy
                                       밁
                                                      Q
                                                                              B
                                                                                                                                                                                                              Ъ
                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                       Query Match
Best Local S
Matches 350
                                                                                                                                                                                                                                                                                                                     (a) assessing v
(b) monitoring
(c) assessing 1
cancer in a partient;
(d) assessing 1
in a patient;
(e) selecting 2
(f) assessing 1
(g) determining
(h) assessing 1
patient;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          17-FEB-2000;
16-MAR-2000;
25-MAY-2000;
09-JUN-2000;
18-JUL-2000;
13-DEC-2000;
                                                                                                                                                                                                                                                                                                                                                                                                       The invention relates to an isolated nucleic acid molecule (I) comprising a nucleotide sequence given in Tables 1-9 (ABV00010-ABV62213) of the specification or its complement. (I) is useful for:

(a) assessing whether a patient is afflicted with prostate cancer;
(b) monitoring the progression of prostate cancer in a patient;
(c) assessing the efficacy of a test compound to inhibit prostate cancer in a patient;
                                                                                                      1905
                                                                                                                                                                                          1785
                                                                                                                                                                                                                                    1725
                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Novel isolated nucleic acid molecule associated with cancerous state prostate cells and correlating with presence of prostate cancer, used for detecting presence of prostate cancer, stage of prostate cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Schlegel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (MILL-) MILLENNIUM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    20-FEB-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             W0200160860-A2
                                                            1965
                                                                                                                                               1845
323
                                                                                 203
                                                                                                                           143
                                                                                                                                                                    83
                                                                                                                                                                                                              23
                                                                                                                                                                                                                                                                                                                                         selecting a composition for inhibiting prostate cancer in a patient; assessing the prostate cell carcinogenic potential of a compound; determining whether prostate cancer has metastazed in a patient; assessing the aggressiveness or indolence of prostate cancer in a
                                                                                                                                                                                                            AACTACCTAAAAGGATATGTTATCACTGGAATTTATTCTGAAGAAGATGTTTTGCTACTG
                                                                                           GTATTGGGACTATTTAGTCCAACCATGAAAACAGCAAAAGAAGATTTTAGTGAAGCAGGA
       GTATTGGGACTATTTAGTCCAACCATGAAAACAGCAAAAGAAGATTTTAGTGAAGCAGGA
                                       AACTACCTAAAAGGATATGTTATCACTGGAATTTATTCTGAAGAAGATGTTTTGCTACTG
                                                                                                                                                                                                                                                          350;
                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                   374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ₽,
                                                                                                                                                                                                                                                                                                                      useful as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2000US-207454P.
2000US-211314P.
2000US-219007P.
2000US-255281P.
                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                  B₽;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2000US-183319P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Endege
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2000US-189862P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2001WO-US05171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              561;
                                                                                                                                                                                                                                                                                                                                                                                              the efficacy of a
                                                                                                                                                                                                                                                                                                  123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PREDICTIVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           11750pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                              99.48;
                                                                                                                                                                                                                                                                                                  ?
                                                                                                                                                                                                                                                                                                                       Ø
                                                                                                                                                                                                                                                                                                                      pharmacodyanamic or
                                                                                                                                                                                                                                                                                                  75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Monahan
                                                                                                                                                                                                                                                                                                  ç;
                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            English.
                                                                                                                                                                                                                                                                Score 348.8;
Pred. No. 4.
                                                                                                                                                                                                                                                                                                  81 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDICINE
                                                                                                                                                                                                                                                       ed. No. 4.3
Mismatches
                                                                                                                                                                                                                                                                                                                                                                                             therapy
                                                                                                                                                                                                                                                                                                  95
                                                                                                                                                                                                                                                                                                  Τ;
                                                                                                                                                                                                                                                                 4.3e-71;
                                                                                                                                                                                                                                                                                                                                                                                             for inhibiting prostate cancer
                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                            DB
                                                                                                                                                                                                                                                                                                  other;
                                                                                                                                                                                                                                                                                                                     pharmacogenomic marker
                                                                                                                                                                                                                                                                          23;
                                                                                                                                                                                                                                                       2
                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                           Length
                 2076
                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            tate of
useful
                                                                                                     1964
                                                                                                                                              1904
                                                                                                                                                                                                                                  1784
                                                                                                                                                                                         1844
                                                            2024
                                                                                                                                                                    142
                                                                                                                                                                                                              82
                                       322
                                                                               262
                                                                                                                         202
                                                                                                                                                                                                                                                       0,
```

```
RESULT 8
ABV33357
ID ABV3
XX
AC ABV3
XX
DT 16-S
XX
Huma
XX
Huma
XX
Huma
XX
Homc
XX
Hom
X
                                       Qy
                                                                                      В
                                                                                                                              Qy
                                                                                                                                                                               밁
                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                           Query Match
Best Local
                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                  cancer in a patient;
(d) assessing the efficacy of a therapy ror ......
(in a patient;
(e) selecting a composition for inhibiting prostate cancer in a patient;
(f) assessing the prostate cell carcinogenic potential of a compound;
(g) determining whether prostate cancer has metastasized in a patient;
(h) assessing the aggressiveness or indolence of prostate cancer in a
                                                                                                                                                                                                                          1725
                                                                                                                                     1785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      a nucleotide sequence given in Tables 1-9 (ABV0001 specification or its complement. (I) is useful for (a) assessing whether a patient is afflicted with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI;
                                            1845
                                                                                                                                                                                                                                                                                                                                                        Sequence 397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             The invention relates to an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Novel isolated nucleic acid molecule associated with cancerous state prostate cells and correlating with presence of prostate cancer, used for detecting presence of prostate cancer, stage of prostate cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       09-JUN-2000;
18-JUL-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 16-MAR-2000;
25-MAY-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human; prostate pharmacogenomic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Schlegel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   17-FEB-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             20-FEB-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WO200160860-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ABV33357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ABV33357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  13-DEC-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         16-SEP-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (MILL-)
                                                                                         106
                                                                                                                                                                                  46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            assessing whether a patient is afflicted with prostate cancer monitoring the progression of prostate cancer in a patient; assessing the efficacy of a test compound to inhibit prostate
GCAGAAGAATATITTAAGTGGGGAATTATATAAAGACCTCATCTTGTATTCTAGTGTGTCA
                                                                                      ATGTACAAGAAAGGCGAGAACCCAGTATCTTATGCTGGAATGTTAGGAACCAAAGATCTC
                                                                                                                                   CTAAAATTTATCCAGCTCAACAGGATTTCATATCCAGTGAATATAACATCGATCCAAGAA
                                                                                                                                                                                  AGGTACAAGAAAGGCGAGAACCCAGTATCTTATGCTGGAATGTTAGGAACCGAAGATCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          prostate
                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MILLENNIUM PREDICTIVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Page 7066; 11750pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ; 2000US-189862P.
; 2000US-207454P.
; 2000US-211314P.
; 2000US-219007P.
; 2000US-255281P.
                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                               BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2000US-183319P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2001WO-US05171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Endege
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          expression marker
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          marker;
                                                                                                                                                                                                                                                                                                                                                             129 A; 80 C;
                                                                                                                                                                                                                                                                                         7.78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     to an isolated nucleic acid molecule (I) comprising given in Tables 1-9 (ABV00010-ABV62213) of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cytostatic;
gene; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  397
                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                           Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ВP
                                                                                                                                                                                                                                                                                                                                                               88 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDICINE
                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CDNA
                                                                                                                                                                                                                                                               e 348.8; DL 4.4e-71; 2;
                                                                                                                                                                                                                                                                                                                                                               100 T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               carcinogen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              33348
                                                                                                                                                                                                                                                                                                                                                               0 other;
                                                                                                                                                                                                                                                                                                                   23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     for:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             pharmacodyanamic
                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                              Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             cancer;
                                                                                                                                                                                                                                                                      0,
                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          state of
useful
cer -
                                                                                                                                                                                                                     1784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  marker;
                                            1904
                                                                                         165
                                                                                                                                     1844
                                                                                                                                                                               105
```

166

0,

99.48;

0

```
RRESULT 9
ABV42280
ADV42280
AC ABV4
AX Huma
AX Homc
AX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δã
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               17-FEB-2000;
16-MAR-2000;
25-MAY-2000;
09-JUN-2000;
18-JUL-2000;
                                                                          (e) sele
(f) asse
(g) dete
(h) asse
patient;
                                                                                                                                                                                                                                                                            a nucleotide sequence given in Tables 1-9 (ABV00010-ABV62213) of the specification or its complement. (I) is useful for:
(a) assessing whether a patient is afflicted with prostate cancer;
(b) monitoring the progression of prostate cancer in a patient;
(c) assessing the efficacy of a test common to the progression of prostate cancer in a patient;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Novel isolated nucleic acid molecule associated with cancerous state prostate cells and correlating with presence of prostate cancer, use for detecting presence of prostate cancer, stage of prostate cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Human; prostate pharmacogenomic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1905
     Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Schlegel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WO200160860-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ABV42280 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             13-DEC-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       20-FEB-2001; 2001WO-US05171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      23-AUG-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                16-SEP-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ABV42280
                                                                                                                                                                                                                              cancer in a patient;
(d) assessing the efficacy of a therapy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (MILL-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     226
                                                                                                                                                                                                           a patient;
                                                                                               selecting a composition for inhibiting prostate cancer in a patient; assessing the prostate cell carcinogenic potential of a compound; determining whether prostate cancer has metastasized in a patient; assessing the aggressiveness or indolence of prostate cancer in a
                                                      is also
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTATTGGGACTATTTAGTCCAACCATGAAAACAGCAAAAGAAGATTTTAGTGAAGCAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCAACCAAATATGCTGCAAGTCTTCCAGCCCTGCTTGCCTTGCCAGACACACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AACTACCTAAAAGGATATGTTATCACTGGAATTTATTCTGAAGAAGATGTTTTTGCTACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2001-662795/76.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTATTGGGACTATTTAGTCCAACCATGAAAACAGCAAAAGAAGATTTTAGTGAAGCAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCAACCAAATATGCTGCAAGTCTTCCAGCCCTGCTGCTTGCCAGACACACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AACTACCTAAAAGGATATGTTATCACTGGAATTTATTCTGAAGAAGATGTTTTGCTACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                            1; Page 8470-8471; 11750pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MILLENNIUM PREDICTIVE MEDICINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ₽,
       397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2000US-183319P.
2000US-189862P.
2000US-207454P.
2000US-211314P.
2000US-219007P.
2000US-255281P.
                                                 useful as a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (first entry)
     ВP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Endege
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            expression
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cancer; cytostatic; carcinogen; pharmacodyanamic marker;
marker; gene; ss.
     129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             cDNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
  A; 80 C;
                                                   pharmacodyanamic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Monahan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               marker
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ВР
     88
  G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CDNA
     100 T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               42271.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            INC
                                                                                                                                                                                                                                for inhibiting
                                                   or pharmacogenomic marker
     0 other;
                                                                                                                                                                                                                                prostate cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  tate of
useful
cer -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  285
```

Query Match

348.8;

DB

23;

Length

```
RESULT 10
AAC28836
ID AAC28
Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Вр
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Local Similarity 99. Matches 350; Conservative
         The present sequence is one of a large number of 5' ESTs derived from mRNAs encoding secreted proteins. No ORF has yet been conclusively identified within the present sequence. The 5' ESTs were prepared from total human RNAs or polyA+ RNAs derived from 30 different tissues. EST sequences usually correspond mainly to the 3' untranslated region (UTR) of the mRNA because they are often obtained from oligo-dT primed cDNA libraries. Such ESTs are not well suited for isolating cDNA sequences derived from the 5' ends of mRNAs and even in those cases where longer cDNA sequences have been obtained, the full 5' UTR is rarely included.
                                                                                                                                                                                                                                                                                                                                                                                                                               gene
                                                                                                                                                                                  New nucleic acid that is a 5' expressed sequence obtaining cDNAs and genomic DNAs that correspond
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1845
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1725 ATGTACAAGAAAGGCGAGAACCCAGTATCTTATGCTGGAATGTTAGGAACCAAAGATCTC
                                                                                                                                              Claim
                                                                                                                                                                      diagnostic,
                                                                                                                                                                                                                          WPI;
                                                                                                                                                                                                                                                  Dumas
                                                                                                                                                                                                                                                                          (GEST
                                                                                                                                                                                                                                                                                                                            21-FEB-2000;
                                                                                                                                                                                                                                                                                                                                                     06-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                               EP1033401-A2
                                                                                                                                                                                                                                                                                                                                                                                                       Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                              Human;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              06-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAC28836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAC28836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2025 TCAACCAAATATGCTGCAAGTCTTCCAGCCCTGCTGCTTGCCAGACACACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1785 CTAAAATTTATCCAGCTCAACAGGATTTCATATCCAGTGAATATAACATCGATCCAAGAA 1844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        46
ESTs are derived
                                                                                                                                                                                                                                                                                                                                                                                                      sapiens
                                                                                                                                                                                                                          2000-500381/45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AACTACCTAAAAGGATATGTTATCACTGGAATTTATTCTGAAGAAGATGTTTTGCTACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTATTGGGACTATTTAGTCCAACCATGAAAACAGCAAAAGAAGATTTTAGTGAAGCAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTATTGGGACTATTTAGTCCAACCATGAAAACAGCAAAAGAAGATTTTAGTGAAGCAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCAGAAGAATATTTAAGTGGGGAATTATATAAAGACCTCATCTTGTATTCTAGTGTGTCTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCAGAAGAATATTTAAGTGGGGAATTATATAAAGACCTCATCTTGTATTCTAGTGTGTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     therapy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGGTACAAGAAAGGCGAGAACCCCAGTATCTTATGCTGGAATGTTAGGAACCGAAGATCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AACTACCTAAAAGGATATGTTATCACTGGAATTTATTCTGAAGAAGATGTTTTGCTACTG
                                                                                                                                              <u>.</u>
                                                                                                                                                                                                                                                  Milne Edwards
                                                                                                                                                                                                                                                                          ) GENSET
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      secreted
                                                                                                                                                                                                                                                                                                                                                                                                                                             5' EST;
                                                                                                                                            SEQ ID 32911; 71pp + CD-ROM; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 standard;
                                                                                                                                                                      forensic,
                                                                                                                                                                                                                                                                                                                            2000EP-0200610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                               chromosome mapping;
                                                                                                                                                                                                                                                                                                                                                                                                                               expressed sequence tag;
chromosome mapping; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     protein
                                                                                                                                                                                                                                                                                                   99US-0122487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CDNA;
                                                                                                                                                                                                                                                  Ū,
from
                                                                                                                                                                      gene therapy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ũ
                                                                                                                                                                                                                                                  Duclert
mRNAs with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EST,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pred. No. 4.4:
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQ
                                                                                                                                                                                                                                                  A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       . No. 4.4e-71;
                                                                                                                                                                      and chromosome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ħ
intact 5'
                                                                                                                                                                                                                                                  Giordano
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ŏ:
                                                                                                                                                                                                                                                                                                                                                                                                                                           secreted protein; cDNA isolation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      32911
ends
                                                                                                                                                                                   tag (5' EST) for to 5'ESTs and fo
                                                                                                                                                                      mapping procedures
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                      tor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        105
```

```
В
                                                                                                                                                                                                                                                                                                                              γQ
                                                                                                                                                                                                                                                                                                                                                  дb
                                                                                                                                                                                                                                                                                                                                                              δõ
                                                                                                                                                                                                                                                                                                                                                                               B
                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                 Дb
                                                                                                                                                                                                                                                                                                                                                                                                                            Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                 뮹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  88888 × 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local S
Matches 349
                                                                               17-FEB-2000;
16-MAR-2000;
25-MAY-2000;
09-JUN-2000;
18-JUL-2000;
13-DEC-2000;
                                                                                                                                                                                      Homo
Novel isolated nucleic acid molecule associated with cancerous state prostate cells and correlating with presence of prostate cancer, used for detecting presence of prostate cancer, stage of prostate cancer
                                 WPI;
                                                                                                                                                                                                                                                                                                                                    2813
                                                                                                                                                                                                                                                                                                                                                                  2753
                                                                                                                                                                                                                                                                                                                                                                                                   2693
                                                                                                                                                                                                                                                                                                                                                                                                                                  2633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2573
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                used to obtain full length cDNAs and genomic DNAs. 5' ESTs are also in diagnostic, forensic, gene therapy and chromosome mapping procedu They are used to obtain upstream regulatory sequences and to design expression and secretion vectors.
                                                 Schlegel
                                                                (MILL-)
                                                                                                                                       20-FEB-2001; 2001WO-US05171
                                                                                                                                                      23-AUG-2001.
                                                                                                                                                                      WO200160860-A2
                                                                                                                                                                                                     Human; prostate pharmacogenomic
                                                                                                                                                                                                                             Human prostate
                                                                                                                                                                                                                                             16-SEP-2002
                                                                                                                                                                                                                                                             ABV38274;
                                                                                                                                                                                                                                                                           ABV38274 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2513 CACAATTTTACCTGCTCAAGAATGGAAACCTCCTCTTCCAGCTTATGATTTTCTAAGTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                                                                   181
                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                    241
                                                                                                                                                                                                                                                                                                                    301
                                                                                                                                                                                                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local Similarity
les 349; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  <u>بــ</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CACAATTTTACCTGSKCAAGAATGGAAACCTCCTCTTCCAGCTTATGATTTTCTAAGTAT
                                 2001-662795/76.
                                                                MILLENNIUM PREDICTIVE
                                                70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 355
                                                                              ; 2000US-183319P.
; 2000US-189862P.
; 2000US-207454P.
; 2000US-211314P.
; 2000US-219007P.
; 2000US-255281P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                Endege
                                                                                                                                                                                                                                             (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BP; 133
                                                                                                                                                                                                                             expression marker
                                                                                                                                                                                                  cancer; cytost
marker; gene;
                                                                                                                                                                                                                                                                             cDNA;
                                                                                                                                                                                                                                           entry)
                                                Ŷ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        7.5%;
98.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Α;
                                                                                                                                                                                                             cytostatic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 50 C; 72 G;
                                                                                                                                                                                                                                                                             416
                                                Monahan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5.
                                                                                                                                                                                                                                                                             ВР
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 341;
Pred. No. 2.
                                                                MEDICINE
                                                                                                                                                                                                     SS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                             CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 94
                                                                                                                                                                                                             carcinogen;
                                                                                                                                                                                                                             38265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 T; 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 21;
.7e-69;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                             pharmacodyanamic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 355;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        procedures.
design
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
      tate of
useful
                                                                                                                                                                                                                                                                                                                                                                  2812
                                                                                                                                                                                                                                                                                                                                                                                                2752
                                                                                                                                                                                                                                                                                                                                                                                 240
                                                                                                                                                                                                                                                                                                                                                                                                                                2692
                                                                                                                                                                                                                                                                                                                                                                                                                                                 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                2632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 60
                                                                                                                                                                                                                                                                                                                                                   300
                                                                                                                                                                                                                                                                                                                                                                                                                 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        used
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ۲,
```

```
RESULT 12
ABV25366
ID ABV25
В
                                                                                                                                                                                                                                                                                                    QΥ
                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                QY
                                                                                                                                                                                                                                                                                                                                                                          Вр
                                                                                                                                                                                                                                                                                                                                                                                               QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                       망
                                                                                                                                                                                                                                                                                                                                                                                                                                          20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local :
                                                                                                 Homo
                                                                                                                                                                                                                                                                                                        4390
                                                                                                                                                                                                                                                                                                                                                    4330
                                                                                                                                                                                                                                                                                                                                                                                                  4270
                                                                                                                                                                                                                                                                                                                                                                                                                                             4210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cancer in a patient;
(d) assessing the efficacy of a therapy for
in a patient;
(e) selecting a composition for inhibiting particular in a sessing the prostate cell carcinogenia
                                                                                                                      Human; prostate pharmacogenomic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               specification or its complement. (I) is useful for:
(a) assessing whether a patient is afflicted with prostate cancer.
(b) monitoring the progression of prostate cancer in a patient;
(c) assessing the efficacy of a test compound to inhibit prostate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             The invention relates to an isolated nucleic acid molecule (I) a nucleotide sequence given in Tables 1-9 (ABV00010-ABV62213) c
                                                      23 - AUG
                                                                           WO200160860-A2
                                                                                                                                                       Human
                                                                                                                                                                                                    ABV25366;
                                                                                                                                                                                                                          ABV25366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Claim
                                                                                                                                                                              16-SEP-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         patient;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (H)
                                                                                                                                                                                                                                                                                   321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (I) is also useful as a pharmacodyanamic or pharmacogenomic marker.
                                                                                                                                                                                                                                                                                                                                                                                                                         141
                                                                                                                                                                                                                                                                                                                               261
                                                                                                                                                                                                                                                                                                                                                                            201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  selecting a composition for inhibiting prostate cancer in a patient; assessing the prostate cell carcinogenic potential of a compound; determining whether prostate cancer has metastazed in a patient; assessing the aggressiveness or indolence of prostate cancer in a
                                                                                                 sapiens
                                                                                                                                                                                                                                                                                   AATTAAGTACCTGCCC
                                                                                                                                                                                                                                                                                                                             TGAACTCTAAATATAGGTTGTAGTAATAAAACATCATTAGCCTAATTATTAGAAAATGCT 4389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCTACTTGATATCTTGTTCTTTAAATTTTCTTCACATATGGTTTGCCTGATACAACTGAT 4149
                                                                                                                                                                                                                                                                                                                                                                          GTGATGCCTGATTAAACTCATTTTCATTTGCTTTTATTTCTAATATGGGAACAATGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTTTATAACTGAAATTTAAGGAATCTAACAGCTAAAACTCAGTAAGTGCATMTATTTCCT
                                                                                                                                                                                                                                                                                             AATTAAGTACCAGCAC
                                                                                                                                                                                                                                                                                                                                                                                                  GTGATGCCTGATTAAACTCATTTTCATTTGCTTTTATTTCTAATATGGGAACAATGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                       TTTTATAACTGAAATTTAAGGAATCTAACAGCTAAAACTCAGTAAGTGCATATATCTCCT
                                                                                                                                                       prostate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          al Similarity
310; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        416
                                                                                                                                                                                                                           standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Page
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        B₽;
                                                                                                                                                                             (first entry
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7806-7807; 11750pp;
                                                                                                                                                       expression
                                                                                                                      marker; gene; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        111
                                                                                                                                                                                                                           cDNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Α,
                                                                                                                                                                                                                                                                                                        4405
                                                                                                                                                                                                                                                                                   336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       78 C;
                                                                                                                                                                                                                           416
                                                                                                                                                       marker cDNA 25357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 307.6; DB 23; Pred. No. 1.7e-61; 1; Mismatches 5;
                                                                                                                                                                                                                           ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        161
                                                                                                                                 carcinogen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           inhibiting
                                                                                                                                 pharmacodyanamic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           prostate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ) comprising of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             cancer
                                                                                                                                  marker;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4209
                                                                                                                                                                                                                                                                                                                                                                                                  4329
                                                                                                                                                                                                                                                                                                                                                                                                                                             4269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  140
                                                                                                                                                                                                                                                                                                                                                                          260
                                                                                                                                                                                                                                                                                                                                                                                                                      200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
```

17-FEB-2000; 16-MAR-2000;

2000US-183319P 2000US-189862P 2001WO-US05171

20-FEB-2001;

```
RESULT 13
AAF93519
ID AAF93
XX
AC AAF93
                                                                                                        ρy
                                                                                                                                    뫄
                                                                                                                                                       Š
                                                                                                                                                                                    Ъ
                                                                                                                                                                                                          Q
                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                         Qy
                                                                                                                                                                                                                                                                                    망
                                                                                                                                                                                                                                                                                                         οy
                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    멍
                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local S
Matches 317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    25-MAY-2000;
09-JUN-2000;
18-JUL-2000;
13-DEC-2000;
 AAF93519;
                         AAF93519
                                                                                                            4450
                                                                                                                                                                                                                                                                                                                                                            4150
                                                                                                                                                                                                                                                                                                                                                                                                            4090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  The invention relates to an isolated nucleic acid molecule (I) comprising a nucleotide sequence given in Tables 1-9 (ABV00010-ABV62213) of the specification or its complement. (I) is useful for:

(a) assessing whether a patient is afflicted with prostate cancer;
(b) monitoring the progression of prostate cancer in a patient;
(c) assessing the efficacy of a test compound to inhibit prostate
                                                                                                                                                            4390
                                                                                                                                                                                                                                                             4270
                                                                                                                                                                                                                                                                                                             4210

    (e) selecting a composition for inhibiting prostate cancer in a patient;
    (f) assessing the prostate call carcinogenic potential of a compound;
    (g) determining whether prostate cancer has metastasized in a patient;
    (h) assessing the aggressiveness or indolence of prostate cancer in a

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               in (d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Novel isolated nucleic acid molecule associated with cancerous state prostate cells and correlating with presence of prostate cancer, use: for detecting presence of prostate cancer, stage of prostate cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cancer in a patient;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (MILL-)
                                                                                     381
                                                                                                                                     321
                                                                                                                                                                                     261
                                                                                                                                                                                                                                    201
                                                                                                                                                                                                                                                                                     141
                                                                                                                                                                                                                                                                                                                                     81
                                                                                                                                                                                                                                                                                                                                                                                    21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           assessing the efficacy of a therapy for inhibiting prostate cancer
                                                                                     TATG
                                                                                                            TTTG
                                                                                                                                                                                                                                               TCTACTTGATATCTTGTTCTTTAAATTTTCTTCACATATGGTTTGCCTGATACAACTGAT 4149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  patient;
                                                                                                                                                                                    TGAACTCTAAATATAGGTTGTAGTAATAAAACATCATTAGCCTAATTATTAGAAAATGCT
                                                                                                                                                                                                                                    GTGATGCCTGATTAAACTCATTTTCATTTGCTTTTATTTCTAATATGGGAACAATGAGAG
                                                                                                                                                                                                                                                                                     TTTTATAACTGAAATTTAAGGAATCTAACAGCTAAAACTCAGTAAGTGCATMTATTTCCT
                                                                                                                                     AATTAAGTACCAGCACATAGAAACATGAAATTGCTTAGTCATTGTACCTTTGTCAGCAAT
                                                                                                                                                                                                                                                                                                             TTTTATAACTGAAATTTAAGGAATCTAACAGCTAAAACTCAGTAAGTGCATATATCTCCT
                                                                                                                                                                                                                                                                                                                                                                                    TCTACTTGATATCTTGTTCTTTAAATTTTTTTCACATATGGTTTGCCTGATACAACTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         also useful as a pharmacodyanamic or pharmacogenomic
                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MILLENNIUM PREDICTIVE MEDICINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    416
                          standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Page 5006;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ₽,
                                                                                                             4453
                                                                                     384
                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2000US-207454P.
2000US-211314P.
2000US-219007P.
2000US-255281P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Endege
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    109
                                                                                                                                                                                                                                                                                                                                                                                                                                               6.7%;
87.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       11750pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ,
OM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    C;
                                                                                                                                                                                                                                                                                                                                                                                                                                     1;
                                                                                                                                                                                                                                                                                                                                                                                                                                               Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 304.4;
Pred. No. 9.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    57 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Τ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                .4e-61;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  24 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                     46;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           23;
                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 416;
                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           marker
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        tate of
useful
                                                                                                                                                                                                                                                           4329
                                                                                                                                                                                                                                                                                                            4269
                                                                                                                                                                                                                                                                                                                                                            4209
                                                                                                                                                            4449
                                                                                                                                                                                                            4389
                                                                                                                                                                                    320
                                                                                                                                                                                                                                                                                     200
                                                                                                                                                                                                                                                                                                                                   140
                                                                                                                                                                                                                                                                                                                                                                                    80
                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
```

```
οy
                                 Вb
                                                             δÃ
                                                                                                                                                            Query Match
Best Local Sin
Matches 348;
                                                                                                                                                                                              encoding SRT, a host cell transformed with the vector, an isolated SRT polypeptide, and an antibody which binds to SRT. The polynucleotide sequence can be used in gene therapy and is useful in the recombinant production of SRT polypeptides, as a hybridisation probe to screen libraries to isolate cDNAs with sequence identity to SRT polypeptides, imap the gene encoding the SRT polypeptides and analysing genetic disorders, tissue typing and disease tissue detection. The SRT polynucleotide sequences can be used in polymerase chain reaction, screening for new therapeutic molecules and generation of antisense RNA and NNA.
                                                                                                                                                                                                                                                                                                                            Sequences AAF93180 - AAF93743 represent polynucleotide sequences encoding human SRT proteins. The cDNA sequences are isolated from various different human tissue cDNA libraries. The invention relates to a method for detecting cDNA encoding an SRT protein, a vector containing cDNA encoding SRT, a host cell transformed with the vector, an isolated SRT encoding SRT, a host cell transformed with the vector, an isolated SRT encoding SRT, a host cell transformed with the vector.
                                                                                                                                                                                                                                                                                                                                                                                                                                                      New isolated nucleic acid molecule encoding a SRT polypeptide for production of recombinant SRT polypeptides, gene mapping, diagnosing genetic disorders and for gene therapy -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo
                                                                                                                                                         Sequence 547
                                                                                                                                                                                                                                                                                                                                                                                                                            Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Baker
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (GETH ) GENENTECH INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 26-JUL-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              21-JUL-2000; 2000WO-US20006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-FEB-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WO200107611-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   21-MAY-2001
    171
                                 114
                                                                111
                                                   encoding
                                 CCTCCTCCTCCGTGGGTGCGGCGGGAATNTTGGCCGGNCGGCCTTGGG-ACGGCCCAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KP,
                                                                                                                                                                                                                                                                                                                                                                                                                          2; Fig 340; 663pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SRT;
                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Goddard A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gene
                                                                                               Conservative
                                                                                                                                                            BP.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SRT protein isolated from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 99US-0145701
                                                                                                                                                           155 A; 117 C; 131 G; 139 T; 5 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    therapy; gene mapping;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   entry)
                                                                                                            6.4%;
88.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mood
                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ĭ,
                                                                                                               Score 290; DB 22; Pred. No. 2.3e-57;
                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       tissue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   human retina tissue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      typing;
                                                                                                                          Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        polypeptide
                                                                                               Indels
                                                                                                                              547;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQ
                                                                                               7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        is
                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      IJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        useful
                                     172
                                                                                                                                                                                                                                                                       ç
                                                                                               ω
••
```

Qy Ωy Ş В 밁 ₽ Qy 밁 407 411 347 351 229 173 289 291 GCTCAGATACAACTGCAGCTGATAATGTTTTCCGGCTTCAATGTCTTTAGAGTTGGGATC CCCCGCCCGCAGGTCCCGGGCAGATAACATAGATCATCAGTAGAAAACTTCTTGAAGTTG TCTTTTGTCATAATGTGCATTTTTTACATGCCAACAGTAAACTCTTTACCAGAACTGAGT -- CAGCATGAAGTGTTGTCTTAGGAAACAGAACAGCAGCGGTGAAAAAACAGACAAAATCC ACAGCATGGAAGTGTTGTCTTAGGAAACAGAACAGCAGCAGTGAAAAAACAGACAAAATCC CCCGGCCGCAAGGTCCGGGCCAATACATAGTCATCAGTAG----AAACTTCTTGAAGTTG 466 406 410 346 350 288 290 228

```
RESULT 14
ABV08367
ID ABV08
XX ABV08
XX ABV08
XX Human
XX Human
XX Human
XX Human
XX Human
XX Homo
OS Homo
PN W020C
XX 23-AL
XX 20-FE
PR 11-FE
PR 11-JI
PR 18-JI
PR 1
Š
                                   DЬ
                                                                 QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2
                                                                                                         Query Match
Best Local S
Matches 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             17-FEB-2000;
16-MAR-2000;
25-MAY-2000;
09-JUN-2000;
                                                                                                                                                                                                                                                                                                                                                              The invention relates to an isolated nucleic acid molecule (I) com a nucleotide sequence given in Tables 1-9 (ABV00010-ABV62213) of t specification or its complement. (I) is useful for:

(a) assessing whether a patient is afflicted with prostate cancer;

(b) monitoring the progression of prostate cancer in a patient;

(c) assessing the efficacy of a test compound to inhibit prostate cancer in a patient;
 4149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Novel isolated nucleic acid molecule associated with cancerous state prostate cells and correlating with presence of prostate cancer, usef for detecting presence of prostate cancer, stage of prostate cancer
                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                            (d) assessing
in a patient;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Schlegel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (MILL-) MILLENNIUM PREDICTIVE MEDICINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           20-FEB-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           23-AUG-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO200160860-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     pharmacogenomic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Human; prostate cancer; cytostatic; carcinogen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human prostate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             13-SEP-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ABV08367;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ABV08367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                471
                                                                                                           Local Sin
hes 301;
                                     43
                                                                                                                                                                                                                                                     selecting a composition for inhibiting prostate cancer in a patient; assessing the prostate cell carcinogenic potential of a compound; determining whether prostate cancer has metastazed in a patient; assessing the aggressiveness or indolence of prostate cancer in a
                                                                                                                                                                                                                     is
                                CCTCAGAAATATTTTAGTACATTGCAACCAGG
TTTTTATAACTGAAATTTAAGGAATCTAACAGCTAAAACTCAGTAAGTGCATMTATTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1; Page 1328; 11750pp; English.
                                                                                                                                                                                                                     also
                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ₽,
                                                                                                                                                                                   447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ; 2000US-183319P.
; 2000US-189862P.
; 2000US-207454P.
; 2000US-211314P.
; 2000US-219007P.
; 2000US-255281P.
                                                                                                                                                                                                                   useful as a pharmacodyanamic or pharmacogenomic
                                                                                                           Conservative
                                                                                                                                                                                 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Endege WO,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2001WO-US05171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (first
                                                                                                                                                                                                                                                                                                                                           the efficacy of a therapy for inhibiting
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        expression marker cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   marker; gene;
                                                                                                                                                                                 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cDNA;
                                                                                                                        5.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          entry)
                                                                                                                                                                                 Α,
                                                                                                                                                                                 86 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Monahan
                                                                                                           1;
                                                                                                                          Score 234.6;
Pred. No. 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SS
                                                                                                                                                                                 75 G; 168 T;
                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                502
                                                                                                                          1.6e-44;
                                                                                                                                             DB 23;
                                                                                                                                                                               2 other;
                                                                                                           15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    pharmacodyanamic marker;
                                                                                                           Indels
                                                                                                                                             Length
                                                                                                                                                                                                                                                                                                                                             prostate
                                                                                                                                               447;
                                                                                                           8
                                                                                                                                                                                                                   marker
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      comprising
                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                               cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              useful
                                                                                                                                                                                                                                                                                                                                                                                                                                                       the
 4208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   of.
                                                                                                           5
```

```
RESULT 15
AAS26179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
14-AUG-2000;
14-AUG-2000;
14-AUG-2000;
14-AUG-2000;
14-AUG-2000;
14-AUG-2000;
14-AUG-2000;
14-AUG-2000;
                                                                                                                                                                                                                                  18-APR-2000;
19-MAY-2000;
07-JUN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cytostatic; cardiant; vasotropic; cerebroprotective; nootropic; neuroprotective; antibacterial; virucide; funglicide; opthalmalog vulnerary; secreted protein; rheumatoid arthritis; hyperproliferative disorder; cardiovascular disorder; cardiac ar cerebrovascular disorder; hlzheimer's disease; infection; ocular corneal infection; wound healing; epithelial cell proliferative, skin ageing; food additive; preservative; antiproliferative.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4267
                                                                                                    26-JUL-2000;
26-JUL-2000;
                                                                                                                                 14-JUL-2000;
                                                                                                                                                                          07-JUL-2000;
07-JUL-2000;
                                                                                                                                                                                                       28-JUN-2000;
30-JUN-2000;
                                                                                                                                                                                                                                                                             16-MAR-2000;
17-MAR-2000;
                                                                                                                                                                                                                                                                                                          24-FEB-2000;
02-MAR-2000;
                                                                                                                                                                                                                                                                                                                                                     31-JAN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4209
                                                                                                                                             11-JUL-2000;
                                                                                                                                                              11-JUL-2000;
                                                                                                                                                                                                                                                                                                                                                                                 17-JAN-2001;
                                                                                                                                                                                                                                                                                                                                                                                                              02-AUG-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                          WO200155322-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Human; immunosuppressive; antiarthritic; ss; antirheumatic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Human cDNA encoding a novel secreted protein,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              07-NOV-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAS26179;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAS26179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAAAATGCTAATTAAGTACCTGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAAAATGCTAATTAAGTACCAGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AATGAGAGTGAACTCTAAATATA-GGTTGTAGTAATAAAACATCATTAGCCTAATTATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTATAA-CATAGACCCGTTGCTACTCTC-AGCACCCTCCTCAATTTTTTTTCCTGTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTGAGAAGTGAACTCTAAATATAGGGTTGTAGTAATAAAACATCATTAGCCTAATTATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     standard;
2000US-0179065
2000US-018628
2000US-01886350
2000US-019874
2000US-0199076
2000US-0199076
2000US-0299467
2000US-0294613
2000US-0214886
2000US-0214687
2000US-0216880
2000US-0217487
2000US-0216880
2000US-0217487
2000US-0217487
2000US-0217487
2000US-0217487
2000US-0217487
2000US-0218290
2000US-0218290
2000US-0224518
2000US-0225218
2000US-0225218
2000US-0225214
2000US-0225214
2000US-0225266
                                                                                                                                                                                                                                                                                                                                                                                 2001WO-US01341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CDNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      nootropic;
opthalmalogical;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cardiac arrest;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 disorder;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 162
```

```
The invention relates to isolated nucleic acid molecules and their CC encoded secreted proteins. The nucleic acids and proteins are used to prevent, treat or ameliorate a medical condition in e.g. humans, mice, CC prevent, treat or ameliorate a medical condition in e.g. humans, mice, CC are also used in diagnosing a pathological condition or susceptibility CC to a pathological condition. Antibodies to the proteins can also be used in alleviating symptoms associated with the disorders and in CC diagnostic immunoassays (ELISA). Disorders which are diagnosed or treated CC include autoimmune diseases e.g. redumentoid arthritis, CC hyperproliferative disorders e.g. repulsams of the breast or liver, CC hyperproliferative disorders e.g. repulsams of the breast or liver, CC cardiovascular disorders e.g. cardiac arrest, cerebrovascular disorders e.g. cardiac arrest, viruses and fungi CC e.g. cerebral ischaemia, angiogenesis, nervous system disorders e.g. Calzheimer's disease, infections caused by bacteria, viruses and fungi CC disorders listed in the specification. The polypeptides can also be used to aid wound healing and epithelial cell proliferation, to CC be used to aid wound healing and epithelial cell proliferation, to creamerate tissues and in chemotaxis. The polypeptides can also be used to additive or preventive to increase or decrease aforace.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    17-NOV-2000
01-DEC-2000
01-DEC-2000
05-DEC-2000
05-DEC-2000
05-DEC-2000
06-DEC-2000
06-DEC-2000
08-DEC-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               17-NOV-2000;
17-NOV-2000;
17-NOV-2000;
17-NOV-2000;
                                                                                                                                                                                                                                                                                                                                                          New nucleic acid molecules encoding 461 human secreted proteins for diagnosing, preventing, treating or ameliorating medical conditions used as food additives or preservatives -
                                                                                                                                                                                                                                                                                                                               Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Rosen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (HUMA-) HUMAN GENOME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            17-NOV-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                   PI; 2001-488783/53.
-PSDB; AAU16192.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -NOV-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -NOV-2000;
-NOV-2000;
-NOV-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -NOV-2000;
-NOV-2000;
-NOV-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -NOV-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NOV-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VOV
                                                                                                                                                                                                                                                                                                                               1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             CA,
                                                                                                                                                                                                                                                                                                                                SEQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Barash SC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2000US-0246528.
2000US-0246610.
2000US-0246611.
2000US-0246611.
2000US-0246613.
2000US-0249207.
2000US-0249210.
2000US-0249211.
2000US-0249211.
2000US-0249214.
2000US-0249215.
2000US-0249216.
2000US-0249216.
2000US-0249216.
2000US-0249217.
2000US-0249216.
2000US-0249217.
2000US-0249218.
2000US-0249218.
2000US-0249218.
2000US-0249218.
2000US-0249218.
2000US-0251918.
2000US-0251988.
2000US-0251868.
2000US-0251868.
2000US-0251868.
2000US-0251898.
2000US-0251989.
2000US-0251999.
2000US-0251999.
2000US-0251999.
2000US-0251999.
2000US-0251999.
2000US-0251999.
2000US-0251999.
2000US-0251989.
2000US-0251999.
2000US-0251999.
2000US-0251999.
                                                                                                                                                                                                                                                                                                                                IJ
                                                                                                                                                                                                                                                                                                                                No
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SCI
preservative
                                                                                                                                                                                                                                                                                                                                                         or preservatives
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ruben
                                                                                                                                                                                                                                                                                                                             980pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                MS
                                                                                                                                                                                                                                          nd proteins are used to
on in e.g. humans, mice,
sheep. They
                                                                                                                                                                                                                                                                                                                                                                          and
```

14 AUG 2000
14 AUG 2000
14 AUG 2000
18 AUG 2000
18 AUG 2000
22 AUG 2000
22 AUG 2000
23 AUG 2000
20 AUG 2000
01 SEP 2000
01 SEP 2000
06 SEP 2000
08 SEP 2000
08 SEP 2000
08 SEP 2000
09 SEP 2000
01 SEP 2000
02 SEP 2000
03 SEP 2000
04 SEP 2000
05 SEP 2000
06 SEP 2000
07 SEP 2000
08 SEP 2000
09 SEP 2000
09 SEP 2000
01 SEP 2000
02 SEP 2000
03 SEP 2000
04 SEP 2000
05 SEP 2000
06 SEP 2000
07 SEP 2000
08 SEP 2000
09 SEP 2000
00 SEP

2000US-0225270
2000US-0225775
2000US-0225757
2000US-0225757
2000US-0225757
2000US-0225759
2000US-02258681
2000US-0225888
2000US-02259344
2000US-02259344
2000US-02259344
2000US-02259344
2000US-02259344
2000US-02259344
2000US-0231244
2000US-0231637
2000US-0235834
2000US-0236370

```
ρy
                                                                                                                                                                                                                                            망
                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                  Вb
                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                          Ъ
Search completed: March 22, 2003, 08:54:57 Job time: 1003 secs
                                                             В
                                                                                    Qy
                                                                                                                    Ъ
                                                                                                                                                Š
                                                                                                                                                                                 망
                                                                                                                                                                                                                                                                      Qγ
                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                     γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 2.3%; Score 106; DB 22; Length 1423; Best Local Similarity 63.2%; Pred. No. 2e-14; Matches 230; Conservative 0; Mismatches 125; Indels 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             capabilities, fat content, lipid, protein, carbohydrate, vitamins, minerals, cofactors and other nutritional components. The present sequence encodes a novel secreted protein of the invention.
                                                             1009
                                                                                                                  3078 CAAGTCTTCTAAATGCAGTACATATTTTATACTTACTGCATTTCTTACTTCCGAGTAGCC 3137
                                                                                                                                                                                                                                                                                                                         2964 AAAGTAAAAGTGAGCAGGCAAAA-----TAATTTTGATATTACTTTTCACCCAGTAGTA 3018
                                                                                                                                                                                                                                                                                                                                                                                                                                          2844 TAATTTACTTTCCTTAAAGAATAATATTAAATCATTTCAAGTTTGCAGACTAGTGCCATCC 2903
                                                                                        3197 CTAG 3200
                                                                                                                                                                                 889
                                                                                                                                                                                                                                                                                                                                                                                                                          651 TAAACTTTGGTCTACTTCAATAATAACCACTTAATATATGTTCTAGAGCAGCGCTGTCC 710
                                                                                                                                                                                                                                                                                                       769
                                                        CTAG 1012
                                                                                                                                                                                                                                                                                                    AGTAAAAGATACAAGTAGAACTAATTTAATGTTTTAATTCAGTATATCCAAAATATC 828
                                                                                                                                                                                CTAGTCTTCAAAATCTGGTATGTATCTTACATTGATAGCACATCTCACTTTGTACTAGCC 948
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4.
```

THIS PAGE BLANK (USPTO)

```
Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        March 22, 2003, 03:03:41; Search time 12776 Seconds (without alignments) 10309.901 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2054640 segs, 14551402878 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-09-847-046-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GenEmbl: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GenCore version 5.1.3 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                           gb_pr:*
                                                                                                                                                                                                                                                                                                                                                                                                                                    gb_pat: *
gb_ph: *
gb_pl: *
                                                                                                                                                                                                           em_pat:*
em_ph:*
em_pl:*
                                                                                                                                                                                                                                                                                                                                                       gb_sts: *
gb_un: *
gb_vi: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gb_om: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gb_ba:*
                                                                                                                                                                     em_sts:*
em_un:*
                                                                                                                                                                                                                                                               em_om:*
em_or:*
                                                                                                                                                                                                                                                                                       em_in:*
em_mu:*
                                                                                                                                                                                                                                                                                                                   em_fun:*
em_hum:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gb_in:*
em_htgo_other:*
             em_htgo_hum:*
em_htgo_mus:*
                                                                                                                  em_htg_other: *
                                                                                                                                em_htg_hum: *
em_htg_inv: *
                                                                                                                                                                                               em_ro:*
                                                                                                                                                                                                                                                                                                                                           em_ba:*
                                                  em_htg_vrt:*
                                                                 em_htg_mam:*
                                                                            em_htg_rod:*
                                                                                        em_htg_pln:*
                                                                                                       em_htg_mus:*
                                                                                                                                                                                                                                                  em_ov:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4109280
```

score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

4444	C C C C C C C C C C C C C C C C C C C	25 26 27 27 29 29 23 23	c 22 c 23		Result No. 1 2 2 3
104.6 104.6 104.4 104.4 103.8	105.4 105.2 105 105 105 104.8	109.2 108.4 107.2 106 106 105.6 105.6	111 111 111 111 111 111 110.2 110.2 109.2	220 220	Score 4433.6 2811.6 2410.2 1995.8
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0					% Query Match 98.0 98.1 53.3
167886 170321 184332 200610 122674	4 7 7 1 5 0 6	7680 3571 5830 58704 3704 9671 7194 9210	122641 154054 155766 170970 264095 172388 172388 176814	000000000000000000000000000000000000000	engt t 455 282 274
σονον	ονονονν	ουουνυσου	00000000	, , , , , , , , , , , , , , , , , , ,	DB DB
002	1010010		AC012605 AC012605 AC014961 AC014564 AC008500 AC008500 AC008500 AC008500 AC008500		SUMMARIES ID AB037765 AK022563 AK097748 AC025659
02405 Homo s 97466 Homo s 11777 Homo s 02851 Homo s 07021 Homo s	0208 0197 0197 4102 4622 3479	7487 Homo sap 3708 Human DN 2361 Human ch 2361 Human ch 3794 Homo sap 3794 Homo sap 3794 Homo sap 3794 Homo sap 3795 Homo sap	2605 Homo 2605 Homo 1919 Homo 1961 Homo 1564 Homo 3500 Homo 3500 Homo 3634 Homo 3634 Homo	187971 Human ch CO27108 Mus mus O21131 Homo sap 079596 Sequence 072131 Homo sap 072131 Homo sap 133453 Human ch 102579 Mus musc 102579 Mus musc 0102579 Homo sap 012619 Homo sap	ip 176 74

ALIGNMENTS

AB037765
LOCUS
AB037765
LOCUS
AB037765
AB037765

DEFINITION
AB037765
VERSION
AB037765
VERSION
AB037765

VERSION
AB037765

ORGANISM
Homo sapiens brain cDNA to mRNA, clone_lib:pBluescriptII SK plus
Clone:fj0047651.

ORGANISM
Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
REFERENCE
AUTHORS
Nagase,T., Kikuno,R., Ishikawa,K.I., Hirosawa,M. and Ohara,O.
TITLE
Prediction of the coding sequences of unidentified human genes.

Pred. No. is the number of results predicted by chance to have a

300 373

```
Вb
                                                                                                                                                                                                                                                                                                          BASE CO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMMENT
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
MEDLINE
PUBMED
REFERENCE
AUTHORS
TITLE
JOURNAL
                                     δÃ
                                                                     B 8
                                                                                                                            рь
                                                                                                                                                       οy
                 8
                                                                                                                                                                                                                ρy
                                                                                                                                                                                                                                                   Query
Best I
Matche
                                                                                                                                                                                                                                                                                                                        COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                 181
                                              194
                                                                          121
                                                                                                     134
                                                                                                                                  61
                                                                                                                                                                                                                                                              Local
                                                                                                                                                             74
                                                                                                                                                                                                                     14
                                                                                                                                                                                           \vdash
                                                                                                                                                                                                                                                                            Match
                                                                                                                                                                                      CGGCTGCAGGCTGGGAGGAGAAGTGCTACGCCTTTGCAGGTTGGCGAAGTGGTTCCAGG
                                                                       GAACTGTTGGCCGCGGCCCTCGGGAACGGCCCAGGTCCCCGCCGCAGGTCCCGGCCAG
                                                                                                                               ATAACATAGATCATCAGTAGAAAACTTCTTGAAGTTGTTCAAGAAAAATTTGAAAGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Direct Submission
Submitted (31-JAN-2000) Osamu Ohara, Kazusa DNA Research Institute,
Submitted (31-JAN-2000) Osamu Ohara, Kazusa DNA Research Institute,
Laboratory of DNA Technology; 1532-3 Yana, Kisarazu, Chiba
292-0812, Japan (E-mail:cdnainfo@kazusa.or.jp,
URL:http://www.kazusa.or.jp/huge/, Tel:+81-438-52-3913,
Fax:+81-438-52-3914)
On May 9, 2002 this sequence version replaced gi:7243068.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               XVI. The code for DNA Res. 20181126 10718198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2 (bases 1 to 4552)
Ohara,O., Nagase,T. and
                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                         1443
                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                              /product="KLAA1344 protein"
/product="KLAA1344 protein"
/product="KLAA1344 protein"
/product="KLAA1344 protein"
/db_xref="G1:20521894"
/db_xref="G1:20521894"
/translation="QQIQRTAWKCCLRKQNTAVKKQTKSAQIQLQLIMFSGFNVFRVG
ISFVLMCIFYMPTVNSLPELSPQKYFSTLQPGKASLAYFCQADSPRTSVFLEELNEAV
RPLQDYGISVAKVNCVKEEISRYCGKEKDLKAKATLFKGNLLLREFPTDTLEDVNALVA
RPLQDYGISVAKVNCVKEEISRYCGKEKDLKAKATLFKGNLLLREFPTDTLEDVNALVA
RPLQDYGISVAKVNCVKEEISRYCGKEKDLKAKATLFKSTVERIGLEFPTDTLEDVNALVA
RPLQDYGISVAKVNCVKEEISRYCGKEKDLKAYTEADRATLAEQPLTTLNIHLF
IYOFVLITEIALLESIGSEDVEYAHLYFFHCKLVLDLTQQCRRTILMEQPLTTLNIHLF
IXTMKAPLLTEVAEDPQOVSTVHLQLGLFLFYIYGQQAYFEADRATAEWYAWRLLGKA
GVLLLLAEDSLEVNITQDQAAVVEKRAEGEYPVEFLVLHDYDLIIGHVENNHHIEEIQED
EDNDMEGPDIDVQDDEVAETVFRDRKRKLPLELTVELTEETFNATVMASDSIVLFYAG
WQAVSMAFLQSYIDVAVKLKGTSTMLLTRINGADMSDVCTKKQNVTEFPIIKMYKKGEN
PVSYAGNLGSTROLKFTQLNIRISYPVNITSIQEAEEVLSGELYKDLLLYSSVSVLGLF
SPTMKTAKEDFSEAGNYLKGYVTTGIYSSEDVLLLSTKYAASLPALLLARHTEGKIES
IPLASTHAQDIYQIITDALLEMFPEITYENLESYFRLQKELFILIFSDGTVNDYKKAI
ITLVKQKYLDSETPCMLNLKNTPVGRGILRAYFDPLFPLFLLLVLNLHSGGQVFAFPS
DQAIIEENLVLMLKKLEAGLENHITILDAQEWKPPLPALDLFLANTSGTRKVP
KCMKETDVQENDKEQHEDKSAVRKEPIETTLRIKHWNRSNWFKEAEKSFRRDKELGCSK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="fj00476s1"
/tlssue_type="brain"
/clone_lib="pBluescriptII SK plus"
/note="fblis sequence was obtained by subcloning of fragments derived from two cDNA clones (1 - 703 was derived from fj00476)."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         <263. 2839
/gene="KIAA1344"
/note="Start codo"
/codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        complete sequences of 150 new large proteins in vitro 7 (1), 65-73 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .4552
                                                                                                                                                                                                                                                               98.0%;
98.8%;
                                                                                                                                                                                                                                                                                                                        Ω
                                                                                                                                                                                                                                                                                                                        890
                                                                                                                                                                                                                                                               Score 4433.6;
Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         codon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Kikuno, R
                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        is
                                                                                                                                                                                                                                                                                                                        1392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        not identified
                                                                                                                                                                                                                                                                                                                        đ
                                                                                                                                                                                                                                                                            DВ
                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDNA
                                                                                                                                                                                                                                                                            9;
                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        clones
                                                                                                                                                                                                                                                                            4552;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        from
                                                                                                                                                                                                                                                54;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     brain which
                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             from
                 240
                                                                                                                                 120
                                                                                                                                                                                         60
                                                                       180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       the
                                                                                                                                                                                                                                                ۲.
δõ
                                                                                                         Qy
                            В
                                                 δ
                                                                                 В
                                                                                                                                             В
                                                                                                                                                                      Qy
                                                                                                                                                                                                  Ф
                                                                                                                                                                                                                           Qγ
                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                  QΥ
                                                                                                                                                                                                                                                                                                                     DЬ
                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                             Ъ
                                                                                                                                                                                                                                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                   рЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                  1160
                                                                                                                                                                          1100
                                                                                                                                                                                                       1081
                                                                                                                                                                                                                                                                                        980
                                                                                                                                                                                                                                                                                                                      961
                                                                                                                                                                                                                                                                                                                                                                             901
                                                                                                                                                                                                                                                                                                                                                  920
                                                                                                                                                                                                                                                                                                                                                                                                        960
                                                                                                                                                                                                                                                                                                                                                                                                                                      841
                                                                                                                                                                                                                                                                                                                                                                                                                                                               800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              089
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGACTTGACCCAGCAATGTAGAAGAACACTAATGGAACAGCCATTGACTACACTGAACAT
                                                                                                                                                                                                                                                                                                                   TGTGGTCTTCAAAAGAGCAGAAGAGGGAGTTCCAGTGGAATTTTTTGGTATTACATGATGT
                                            AGCAGGAGTTCTACTCTTGTTAAGGGACTCTTTGGAAGTGAACATTCCTCAAGATGCTAA
                                                                                                   GGCTACTTATGAAGCTGATAGAAGAACTGCAGAATGGGTTGCCTTGGCGTCTTCTGGGAAA
                                                                                                                                                             ACAAGTTTCAACTGTCCATCTCCAACTGGGCTTACCACTGGTTTTTATTGTTAGCCAACA
                                                                                                                                                                                                                     TCACCTGTTTATTAAGACAATGAAAGCACCTCTGTTGACTGAAGTTGCTGAAGATCCTCA
                                                                                                                                                                                                                                                                                                                                                                            TTTTGTGTATGGGACTACATACCAATTTGTCTTAACCACAGAAATTGCCCTTTTGGAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGCTACTTATGAAGCTGATAGAAGAACTGCAGAATGGGTTGCTTGGCGTCTTCTGGGAAA
                                                                                                                                              ACAAGTTTCAACTGTCCATCTCCAACTGGGCTTACCACTGGTTTTTATTGTTAGCCAACA
                                                                                                                                                                                                       TCACCTGTTTATTAAGACAATGAAAGCACCTCTGTTGACTGAAGTTGCTGAAGATCCTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                    TATTACCAACCTGGAAGACCTTCAGAACATAGAAAATGCTCTGAAAGGAAAAGCAAATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCAACCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTACATGCCAACAGTAAACTCTTTACCAGAACTGAGTCCTCAGAAATATTTTAGTACATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAAATAGAAAATAAAGAATTAACAGCAGATACAGAGGACAGCATGGAAGTGTTGTCTTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                               TATATTCTCATATGTAAGAGCCATTGGAATACCAGAGCACAGAGCAGTCATGGAAGCCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TATTACCAACCTGGAAGACCTTCAGAACATAGAAAATGCTCTGAAAAGGAAAAGCAAATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ---TCTTGAAGAACTGAATGAGGCTGTTAGACCTCTGCAGGACTATGGAATTTCAGTTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCAACCAGGAAAAGCCTCTTTAGCTTATTTTTGTCAAGCTGATTCCCCAAGAACATCTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTACATGCCAACAGTAAACTCTTTACCAGAACTGAGTCCTCAGAAATATTTTAGTACATT
```

1219

1140 1159 1200

1279

1099

1039

1080

979 1020 900 919 859

840

799

720 739 780 679

420 420 493 480 502 540 559 660 660

ду Д

1621 1580 1561 1520 1501 1460

g g

1400

1441

DЬ Qγ В

1381

1321

					GCTTGCCAGACACAGAAGGCAAAATAGAGAGCATCCCACTAGCTAG		1999	CCTCATCTTGTATTCTAGTGTGTCAGTATTGGGACTATTTAGTCCAACCATGAAAACAGC 1939 									TGATTTAATAATATCTCATGTGGAAAATAATATGCACATTGAGGAAATACAAGAAGATGA 1399 	
Оу	Qy Db	Оу	Qу Db	Qy Db	Qy Db	Qy Db	Qy Db	Qy Db	Оу	Qy Db	Qy Db	Оу	Qy	Qy Db	Оу	Db Qy	Qy Oy	da
3440 ATCCTGCTAAATAACCTGCATTGGACAGCGCCCCACAACAAAGAATAATCCTGCCCGGAAA 3499	3380 GAGACATTTTTGATGTCATGACTAGGGCAGTTATTGACATTTAGTGAGATAGAGGCCATGG 3439	3320 TGGAGTCATGATATTAAAATCAGCGTTTGTCAACCTCAGGGGATATTTAGCAATTGTCGG 3379	3260 ACTCTAATCACAGTTAACTCCACAGTGCATTCATGCAGCTGACAGTTATATTTGTTTTAT 3319	3200 GACAAAAACTAGCATAATTAACTTAGTTCTAGCCATGATTTCTATTTGGATTAAAATTAA 3259 	3140 ATTTCAAGTGTTCATTGCCACATGTGGCCTGTGACTACTGTATTGGACAGTTCAGTACTA 3199	3080 AGTCTTCTAAATGCAGTACATATTTTATACTTACTGCAFTTCTTACTTCCGAGTAGCCAT 3139 	3020 ACCCAAAATAGCGAAATATAGAAATTATTAATGAGATATTTTACATCCTTTTTTGTACCA 3079 	2960 AAACAAAGTAAAAGTGAGCAGGGCAAAATAATTTTGATATTACTTTTCACCCAGTAGTAT 3019	2900 ATCCAATAGAATTATAATATAAGTCACATATTTTATTTAAAATTTTCTAGTAACTACATT 2959	2840 GACTTAATTTATTTCCTTAAAGAATAATATTAAATCATTTCAAGTTTGCAGACTAGTGCC 2899	2780 ATGCTCAAAAGTGAACTAATTTTATAGGGCTGTGGTTTCCAAAATTTTTTTGGCATGATA 2839	2720 GAATAGAAGTAATTGGTTTAAAGAAGCAGAAAAATCATTTAGACGTGATAAAGAGTTAGG 2779	2660 ACATGAAGATAAATCGGCAGTCAGAAAAGAACCGATTGAAACTCTGAGAATAAAGCATTG 2719 	2600 CACTAGGAAAGTTCCCAAGTGTATGAAAGAAACAGATGTGCAGGAGAATGATAAGGAACA 2659 	2540 ACCTCCTCTCCAGCTTATGATTTTCTAAGTATGATAGATGCCGCAACATCTCAACGTGG 2599	2480 GAAGAAATTAGAAGCAGGACTAGAAAATCATATCACAATTTTACCTGCTCAAGAATGGAA 2539	2420 CCAAGTATTTGCATTCCTTCAGACCAGCCTATAATTGAAGAAAACCTTGTATTGTGGCT 2479	ATATTTTGATCCTCTGCCTCCCCTTCCTCTTGTTTTTGGTGAATCTGCATTCAGGTGG

δÃ 망 Qy Ъ οy рь δð DЪ δδ

2300 2281 2240 2221 2180 2161 2120

8 DЪ

2360

P Qy

2000 1981 1940 1921 1880

2101

2060 2041 dg VQ

ДЬ Qy Вb QΥ DЬ 2 ρь δ Ъ 9 DЬ δÃ В Qy

1801 1760 1741 1700 1681 1640

1861 1820

```
Q
                                                                                                         ρ
                                                                                                                                    В
                                                                                                                                                        QΥ
                                                                                                                                                                                                    οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
멍
                 δÃ
                                           Вb
                                                                                        В
                                                                                                                                                                                 В
                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                       рь
                                                                                                                                                                                                                                                                                          οy
                                                                                                                                                                                                                                                                                                                     망
                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                Ъ
                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Вр
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               οy
4501
                      4460
                                                                                         4381
                                                                                                                                      4321
                                                                                                                                                            4280
                                                                                                                                                                                  4261
                                                                                                                                                                                                       4220
                                                                                                                                                                                                                              4201
                                                                                                                                                                                                                                                     4160
                                                                                                                                                                                                                                                                          4141
                                                                                                                                                                                                                                                                                                 4100
                                                                                                                                                                                                                                                                                                                      4081
                                                                                                                                                                                                                                                                                                                                            4040
                                                                                                                                                                                                                                                                                                                                                                   4021
                                                                                                                                                                                                                                                                                                                                                                                        3980
                                                                                                                                                                                                                                                                                                                                                                                                              3961
                                                                                                                                                                                                                                                                                                                                                                                                                                  3920
                                                                                                                                                                                                                                                                                                                                                                                                                                                          3901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3500
          ATTAATGTTTGTCATAATTTTTAAATAAAGTGTCTGGGTTTCAGAATACCTTC
                                                       CAGCACATAGAAACATGAAATTGCTTAGTCATTGTACCTTTTGTCAGCAATTTTTGACAGTC
                                                                                                   ATATAGGTTGTAGTAATAAAACATCATTAGCCTAATTATTAGAAAATGCTAATTAAGTAC
                                                                                                                                                ATTAAACTCATTTTCATTTGCTTTTATTTCTAATATGGGAACAATGAGAGTGAACTCTAA
                                                                                                                                                                                                                                       GAAATTTAAGGAATCTAACAGCTAAAACTCAGTAAGTGCATMTATTTCCTTATAACATAG
                                                                                                                                                                                                                                                                         ATCTTGTTCTTTAAATTTTCTTCACATATGGTTTGCCTGATACAACTGATTTTATAACT
                                                                                                                                                                                                                                                                                                                    TTTGTTGAGAATATTCTATTTGGTGCTCTACTGTATTTTCTTTTTAATATCTACTTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATTAATGTTTGTCATAATTTAAATAAAGTGTCTGGGTTTCAGAATACCTTC
                                                                                                                                                                                            ACCCGTTGCTACTCTCAGCACCCTCTCCTCAATTTTTTTCCTGTAGCATGTGATGCCTG
                                                                                                                                                                                                                              GAAATTTAAGGAATCTAACAGCTAAAACTCAGTAAGTGCATCTATTTCCTTATAACATAG
                                                                                                                                                                                                                                                                                                                                                                  CTGTGAGGGAGGGAAAGATTAGCCAAAGAGTTAATTTTCATTCCAAATCACTTAGCTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATTCAGCATTCTGCCATCTCCTCATGGAAAGAGAGGCTCCCTCATCTGAAGCGTCTCTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCCAGAATTTCCTGGTTCTGCTCACGTATCATGTTTGAAAAATTTTTGGCTATTAAAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGGTAGTCGTGCCAAGGCTGAGTAACCTTGTGTTTAAAAGTAACCTGTGGCAGACTAGGTT
                                            CAGCACATAGAAACATGAAATTGCTTAGTCATTGTACCTTTGTCAGCAATTTTGACAGTC
                                                                                         ATATAGGTTGTAGTAATAAAACATCATTAGCCTAATTATTAGAAAATGCTAATTAAGTAC
                                                                                                                                      ATTAAACTCATTTCATTTGCTTTTATTTCTAATATGGGAACAATGAGAGTGAACTCTAA
                                                                                                                                                                                 ACCCGTTGCTACTCTCAGCACCCTCTCCTCAATTTTTTTCCTGTAGCATGTGATGCCTG
                                                                                                                                                                                                                                                                                                                                                                                        AGACTGATCTGTTTGTAGCAGTTGTTTTGTCTCATTTTTGCTCTGTGCATTTTTTGAGACA
                                                                                                                                                                                                                                                                                                                                                                                                             CTGTGAGGGAGGGAAAGATTAGCCAAAGAGTTAATTTTCATTCCAAATCACTTAGCTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATTCAGCATTCTGCCATCTCCTCATGGAAAGAGAGGCTCCCTCATCTGAAGCGTCTCTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTCAGAAAGTGATGGGATAACCCTAGAAGAGGACTCAGAATGATATTTATATTTTAAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCCAGAATTTCCTGGTTCTGCTCACGTATCATGTTTGAAAAAATTTTTGGCTATTAAAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGGTAGTCGTGCCAAGGCTGAGTAACCTTGTGTTAAAAGTAACCTGTGGCAGACTAGGTT
                      4511
4552
                                                                                                                                                                                                                                                                                              4159
                                                                   4459
                                                                                                               4399
                                                                                                                                      4380
                                                                                                                                                                                 4320
                                                                                                                                                                                                      4279
                                                                                                                                                                                                                              4260
                                                                                                                                                                                                                                                                                                                      4140
                                                                                                                                                                                                                                                                                                                                                                   4080
                                                                                                                                                                                                                                                                                                                                                                                        4039
                                             4500
                                                                                         4440
                                                                                                                                                                                                                                                   4219
                                                                                                                                                                                                                                                                         4200
                                                                                                                                                                                                                                                                                                                                            4099
                                                                                                                                                                                                                                                                                                                                                                                                             4020
                                                                                                                                                                                                                                                                                                                                                                                                                                  3979
                                                                                                                                                                                                                                                                                                                                                                                                                                                         3960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3859
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3600
```

RESULT 2 AK022563 LOCUS

AK022563

2820 bp

mRNA

linear

PRI

01-AUG-2002

```
TITLE
JOURNAL
REFERENCE
                                  Qy
                                                                                                                  밁
                                                                                                                                                                    QΥ
                                                                                                                                                                                                                                        망
                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VERSION
KEYWORDS
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DEFINITION ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity
Matches 2814; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AUTHORS
                                                                                                                                                                                                                                                                                                                                                              1866
                                                                                                                                                                             1806
                                                                                                                                                                                                                                                                                                   1746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
   181
                                                                                                                     121
                                                                                                                                                                                                                                           61
GAATTATATAAAGACCTCATCTTGTATTCTAGTGTGTCAGTATTGGGACTATTTAGTCCA
                                                                                                                  AGGATTTCATATCCAGTGAATATAACATCGATCCAAGAAGCAGAAGAATATTTAAGTGGG
                                                                                                                                                                                                                                        CCAGTATCTTATGCTGGAATGTTAGGAACCAAAGATCTCCTAAAATTTATCCAGCTCAAC
                                                       GAATTATATAAAGACCTCATCTTGTATTCTAGTGTGTCAGTATTTGGGGACTATTTAGTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Submitted (23-AUG-2000) Takao Isogai, Helix Research Institute, Genomics Labbratory; 1532-3 Yana, Kisarazu, Chiba 292-0812, Japan (E-mail:genomics@hri.co.jp, Tel:81-438-52-3975, Fax:81-438-52-3986) NEDO human cDNA sequencing project supported by Ministry of International Trade and Industry of Japan; CDNA full insert sequencing: Research Association for Biotechnology; CDNA library construction, 5'-6 3'-end one pass sequencing and clone selection: Helix Research Institute (supported by Japan Key Technology Center etc.) and Department of Virology, Institute of Medical Science, Institute of Telus Control Contro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Isogai,T., Ota,T., Hayashi,K., Sugiyama,T., Otsuki,T., Suzuki,Y Nishikawa,T., Nagai,K., Sugano,S., Aotsuka,S., Yoshikawa,Y., Matsunawa,H., Ishii,S., Kawai,Y., Saito,K., Yamamoto,J., Wakamura,Y., Nagahari,K., Masuho,Y. and Sasaki,N.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AK022563.1 GI:10434024
oligo capping; fis (full insert sequence).
Homo sapiens teratocarcinoma cell_line:NT2
clone_lib:NT2RM2 clone:NT2RM2001681.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               University of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2 (bases 1 to 2820)
Isogai,T. and Otsuki,T.
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NEDO human cDNA sequencing 
Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens cDNA FLJ12501
AK022563
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     911
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ۵
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /codon_start=1
/protein_id=Babl4101.1"
/protein_id=Babl4101.1"
/db_xref="Gi:10434025"
/db_xref="Gi:10434025"
/translation="mykkgenpvsyagmlgtedllkftolnrisypvnitsiqeaeey
/translation="mykkgenpvsyagmlgtedllkftolnrisypvnitsitedpvlllstt
kyaaslpalliarhtegkiesiplasthadepssagmlgryvlyterelpsyftl
kyaaslpalliarhtegkiesiplasthadelpvoitblakkntpvgrgilrayfdplp
kkpllilesdgtwnpqykkaliftlykqkxlldsftpcwlmkkntpvgrgilrayfdplp
plpllilesdgtwnpqykkaliftlykqkxlldstpcyckerplpppp
prpllvlvnlhsggqveafpsdaaiienlvlwlkkleaglemhitilpaqemkpplp
aydptlswidaatsqrgtrkvpkcmketdvqendkeqhedksavrkepietlrikhwnr
snwfkbleksfrrbkelgcskvu"
snwfkbleksfrrbkelgcskvu"
g 496 c 504 g 909 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /urganism="Homo sapiens"
/db_xref="taxon:9606"
/clone="NT2RM2001681"
/cell line="umr"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /clone_lib="NT2RM2"
/note="cloning vector: pME18SFL3~mRNA
/neuronal precursor cells."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /cell_line="NT2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="unnamed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /cell_type="teratocarcinoma"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Metazoa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               62.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Tokyo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Chordata;
Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 2811.6;
Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              fis,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    product"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NT2RM2001681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              uninduced
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Suzuki, Y.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                          1925
                                                                                                                                                                                1865
                                                                                                                                                                                                                                                                                                      1805
                                                                                                                                                                                                                                                                                                                                                                                                                           1745
   240
                                                                                                                                                                                                                                                                                                                                                                    60
                                                                                                                        180
                                                                                                                                                                                                                                           120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NT2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
```

AT CAMPATANATTINATINANAMANAMANAMANAMANAMANAMATATANATTINATTI	CTAGTAACTACATTAAACAAAGTAAAAGTGAGCAGGGCAAAATAATTTTTGATATTACTTT	TGCAGACTAGTGCCATCCAATAGAATTATAATATAAGTCACATATTTTATATAAAATTTT 2	2826 TTTTTGGCATGATAGACTTAATTTACTTTCCTTAAAGAATAATAATAATCATTTCAAGTT 2885	2766 GATAAAGAGTTAGGATGCTCAAAAGTGAACTAATTTTATAGGGCTGTGGTTTCCAAAATT 2825 			2586 ACATCTCAACGTGGCACTAGGAAAGTTCCCCAAGTGTATGAAAGAAA	2526 GCTCAAGAATGGAAACCTCCTCTTCCAGCTTATGATTTTCTAAGTATGATAGATGCCGCA 2585	2466 CTTGTATTGTGGCTGAAGAAATTAGAAGCAGGACTAGAAAATCATATCACAATTTTACCT 2525 		2346 GGAATCTTGCGGGCATATTTTGATCCTCTCCCCCCTTCCTCTTCTTTTTGGTGAAT 2405	AAATACTTGGATTCATTTACTCCATGCTGGTTAAATCTAAAGAATACTCCAGTGGGGAGA	TTCAGTGATGGCACTGTAAATCCTCAATATAAAAAAGCAATATTGACACTGGTAAAGCAG	2166 GAAATCACTGTGGAAAATCTTCCCCAGTTATTTCAGACTTCAGAAAACCATTATTGATTTTG 2225 	2106 AGCACACATGCACAAGACATAGTTCAAATAATAACAGATGCACTACTGGAAATGTTTCCG 2165	CTTCCAGCCCTGCTGCTTGCCAGACACAGAAGGCAAAATAGAGAGCATCCCACTAGCT	ATCACTGGAATTTATTCTGAAGAAGATGTTTTGCTACTGTCAACCAAATATGCTGCAAGT 	1926 ACCATGAAAACAGCAAAAGAAGTTTTAGTGAAGCAGGAAACTACCTAAAAGGATATGTT 1985
ОУ 40	Qy 40 Db 23	Qy 39 Db 22	Qy 39 Db 22			Qy 37 Db 20	Qу 36 Db 19	Qу 36 Db 19	⊢ ω	Qу 34 Db 18	ОУ 34 ДБ 17	Qу 33 Db 16	Qy 3: Db 16	Qy 32		Qy 31 Db 14	Qy 30 Db 13	Qу 30 Db 13
086 AATATCTACTTGATATCTTGTTCTTTAAATTTTCTTCACATATGGTTTGCCTGATACAAC 4145	026 CATTITTTGAGACATTTGTTGAGAATATTCTATTTGGTGCTCTACTGTATTTTTCTTTTT 4085 	3966 ATCACTTAGCTGTTAGACTGATCTGTTTGTAGCAGTTGTTTGT	906 CACACGGCCTCATTCTGTGAGGGAGGGAAAGATTAGCCAAAGAGTTAATTTTCATTCCAA 3965 	TGAAGCGTCTCTGAAATCTACCCTTGCAAGCTTCAGACAATCAGTTGATCTCCCTGAGC 1	CAGATTGAACAGGGATTCAGCATTCTGCCATCTCCTCATGGAAAGAGAGGCTCCCTCATC	3726 TTATATTTTAAGTGAGTCTTAAAACCTCCTCTTATTTCTACAAGTTATATGGCTAAATTT 3785	666 TCTTTTCTAATATTTTCAGAAAGTGATAGGGATAACCCTAGAAGAGGACTCAGAATGATAT 3725 	15	TGGCAGACTAGGTTTCCAGAATTTCCTGGTTCTGCTCACGTATCATGTTTGAAAAAATTT 360 	TATCCTGCCCGAAATGGTAGTCGTGCCAAGGCTGAGTAACCTTGTGTTAAAAGTAACCTG 3	3426 AGTAGAGGCCATGGATCCTGCTAAATAACCTGCATTGGACAGCGCCCCCACAACAACAACAAT 3485 	366 TTAGCAATTGTCGGGAGACATTTTTGATGTCATGACTAGGGCAGTTATTGACATTTAGTG 3425 	336 TATATTTGTTTTATTGGAGTCATGATATTAAAATCAGCGTTTGTCAACCTCAGGGGATAT 3365 	3246 TGGATTAAAATTAAACTCTAATCACAGTTAACTCCACAGTGCATTCATGCAGCTGACAGT 3305	ACAGTTCAGTACTAGACAAAAACTAGCATAATTAACTTAGTTCTAGCCATGATTTCTATT	3126 TTCCGAGTAGCCATATTTCAAGTGTTCATTGCCACATGTGGCCTGTGACTACTGTATTGG 3185	3066 CCTTTTTTGTACCAAGTCTTCTAAATGCAGTACATATTTTATACTTACT	3006 TCACCCAGTAGTATACCCAAAATAGCGAAATATAGAAATTATTAATGAGATATTTACAT 3065

망 QУ В γQ В δÃ 망 Ş DЬ 밁 δÃ В Q

Q 밁 Вр

ρ

망 QΥ Db δÃ В Ş Вþ Qy Qy 밁 Š 밁 Q

```
TITLE
JOURNAL
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 3
AK097748
                                                                                                                                                                                                      COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         рь
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qy
                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Locus
                                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2401
                                                                                  source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCATGTGATGCCTGATTAAACTCATTTTCATTTTGCTTTTATTTCTAATATGGGAACAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGCTAATTAAGTACCAGCACATAGAAACATGAAATTGCTTAGTCATTGTACCTTTGTCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGAGTGAACTCTAAATATAGGTTGTAGTAATAAAACATCATTAGCCTAATTATTAGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGAGTGAACTCTAAATATAGGTTGTAGTAATAAAACATCATTAGCCTAATTATTAGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCATGTGATGCCTGATTAAACTCATTTTCATTTGCTTTTATTTCTAATATGGGAACAATG
                                                                                                               Direct Submission
Submitted (04-JUI-2002) Takao Isogai, FLJ Project(HRI Team); 2-6-7
Razusa-Kamatari, Kisarazu, Chiba 292-0812, Japan
(E-mail:genomics@hri.co.jp, Tel:81-438-52-3975, Fax:81-438-52-3986)
REDO human cDNA sequencing project supported by Ministry of Economy, Trade and Industry of Japan; cDNA full insert sequencing:
Research Association for Biotechnology (RAB); cDNA library construction: Helix Research Institute (HRI) (supported by Japan Key Technology Center etc.); 5' - 6' - end one pass sequencing: RAB, HRI, and Biotechnology Center, National Institute of Technology and Evaluation; clone selection for full insert sequencing: HRI and
                                                                                                                                                                                                                                                                                                                                   Arita, M., Musashino, K., Yuuki, H., Hara, H., Sugiyama, T., Irie, R., Otsuki, T., Sato, H., Wakamatsu, A., Ishii, S., Yamamoto, J., Isono, Y. Kawai-Hio, Y., Saito, K., Nishikawa, T., Kimura, K., Yamashita, H., Matsuo, K., Nakamura, Y., Sekine, M., Kikuchi, H., Kanda, K., Wagatsuma, M., Murakawa, K., Kanehori, K., Sugiyama, A., Kawakami, B., Suzuki, Y., Sugano, S., Nagahari, K., Masuho, Y., Nagai, K. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo
                                                                                                                                                                                                                                                                       Isogai, T. and Yamamoto, J.
                                                                                                                                                                                                                                                                                               Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Chordata; Craniata; V
Mammalia; Eutheria; Primates; Catarrhini;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         clone: TESTI2039177.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    oligo capping; fis (full Homo sapiens testis cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AK097748.1
                                                                                                                                                                                                                                                                                    (bases 1 to 2747)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7748 2747 bp
sapiens cDNA FLJ40429 fis,
                                                                                                          annotation: HRI and
                                                                                                                                                                                                                                                                                                              human cDNA sequencing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sapiens
/tissue_type="testis"
/clone_lib="TESTI2"
/note="cloning vector
                                                                                          tation: HRI and RAB.
Location/Qualifiers
                                                      /organism="Homo sapiens"
/db_xref="taxon:9606"
                                        /clone="TESTI2039177"
                                                                                                                                                                                                                                                                                                                                                                                                                      Takahashi-Fujii,A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GI:21757613
    vector:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    insert so
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     to
                                                                                                                                                                                                                                                                                                             project
                                                                                                                                                                                                                                                                                                                                                                                                                   Tanase, T., Imose, N., Takeuchi, K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         mRNA linear clone TESTI2039177.
  PME18SFL3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 sequence).
A, clone_lib:TEST12
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRI
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     15-JUL-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2460
                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                             DЬ
             δÃ
                                        В
                                                            Qy
                                                                                            밁
                                                                                                                  δÃ
                                                                                                                                                 Вþ
                                                                                                                                                                   δÃ
                                                                                                                                                                                                    ₽
                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                        망
                                                                                                                                                                                                                                                                                                                                     Qγ
                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                          Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local
               1045
                                                                                             841
                                                                                                                                                  781
                                                                                                                                                                          865
                                                                                                                                                                                                    721
                                                                                                                                                                                                                                                                                    745
                                                                                                                                                                                                                                                                                                              601
                                                                                                                                                                                                                                                                                                                                                                 541
                                                                                                                                                                                                                                                                                                                                                                                                                       481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       805
                                                                                                                                                                                                                                                         661
                                                                                                                                                                                                                                                                                                                                         685
                                                                                                                                                                                                                                                                                                                                                                                              625
                                                                                                                                                                                                                                                                                                                                                                                                                                                565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local Similarity
nes 2588; Conserv
                                       GCTCTGAGGATGTGGAATATGCACATCTCTACTTTTTTCATTGTAAACTAGTCTTGGACT
                                                                                                                                                                                                   CCAACCTGGAAGACCTTCAGAACATAGAAAATGCTCTGAAAGGAAAAGCAAATATTATAT
                                                                                                                                                                                                                                                                                                                                                                  CATATTTATTCAAGGGCAACATATTGCTCAGAGAATTCCCTACTGACACCTTGTTTGATG
                                                                                                                                                                                                                                                                                                                                                                                                                      TGTTTATTAAGACAATGAAAGCACCTCTGTTGACTGAAGTTGCTGAAGATCCTCAACAAG
                                                                                                                                                  TGTATGGGACTACATACCAATTTGTCTTAACCACAGAAATTGCCCTTTTGGAAAGTATTG
                                                                                                                                                             TGTATGGGACTACATACCAATTTGTCTTAACCACAGAAATTGCCCTTTTGGAAAGTATTG
                                                                                                                                                                                                                                                         CCAACCTGGAAGACCTTCAGAACATAGAAAATGCTCTGAAAGGAAAAGCAAATATTATAT
                                                                                                                                                                                                                                                                                                             TGAATGCCATTGTCGCCCATGTTCTTTTGCTCTTTTTTTAGTGAAGTGAAATATATTA
                                                                                                                                                                                                                                                                                                                           TGAATGCCATTGTCGCCCATGTTCTCTTTTGCTCTTTTTTAGTGAAGTGAAATATATTA
                                                                                                                                                                                                                                                                                                                                                                                CATATTTATTCAAGGGCAACATATTGCTCAGAGAATTCCCTACTGACACCTTGTTTGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTGAAGAACTGAATGAGGCTGTTAGACCTCTGCAGGACTATGGAATTTCAGTTGCCAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAGGAAAAGCCTCTTTAGCTTATTTTTGTCAAGCTGATTCCCCCAAGAACATCTGTATTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAGG-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTTCCGGCTTCAATGTCTTTAGAGTTGGGATCTCTTTTGTCATAATGTGCATTTTTTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTTCCGGCTTCAATGTCTTTAGAGTTGGGATCTCTTTTGTCATAATGTGCATTTTTTACA 438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGAACACAGCAGTGAAAAAACAGACAAAATCCGCTCAGATACAACTGCAGCTGATAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGAAAATAAAGAATTAACAGCAGATACAGAGGACAGCATGGAAGTGTTGTCTTAGGAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATAGATCATCAGTAGAAAACTTCTTGAAGTTGTTCAAGAAAATTTTGAAAGTAGCAAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGAAAATAAAGAATTAACAGCAGATACAGAGGACAGCATGGAAGTGTTGTCTTAGGAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATAGATCATCAGTAGAAAACTTCTTGAAGTTGTTCAAGAAAATTTGAAAGTAGCAAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       53.3%;
94.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ဂ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 2410.2;
Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            763
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DВ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          w
••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          156;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2747;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               등
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                1104
                                           960
                                                                                              900
                                                                                                                                                                           924
                                                                                                                                                                                                                                                                                    804
                                                                                                                                                                                                                                                                                                                                       744
```

1044

984 840 780 864 720

660

600 684 48C 564 42C 504 360

540 624 498

300

378

180 318 120 60

2;

240

					•																				
		ORG	VERSION KEYWORDS SOURCE	DEFI	RESUL ACO25	Db 2	Ş	Db	Ov	문 5	Ş	Ωy	Db	Qy	В	νQ	Дy	Db	Qy	Db	Qy	Db	Qy	Db	Qy
THORS	AUTHORS TITLE JOURNAL EFERENCE	GANISM RENCE	ION ORDS	INITION	ILT 4 5659/c	70	2683	64	82	58	л	2503 2521	2461	2443	2401	2383	2323	28	2263	2221	2203	2161	2143	2101	2083
Birren, B., Linton, L., Nusbaum, C., Lander, E., Abraham, H., Allen, N., Anderson, S., Baldwin, J., Barna, N., Bastlen, V., Bedda, F., Anderson, S., Baldwin, J., Barna, N., Bastlen, V., Bedda, F., Boguslavkiy, L., Boukhgalter, B., Brown, A., Burkett, G., Campopiano, A., Castle, A., Choepel, Y., Colangelo, M., Collins, S., Collymore, A., Cooke, P., DeArellano, K., Dewar, K., Diaz, J.S., Dodge, S., Domino, M., Doyle, M., Ferreira, P., FitzHugh, W., Gage, D., Galagan, J., Gardyna, S., Ginde, S., Goyette, M., Grahham, L., Grand-Plerre, N., Grant, G., Hagos, B., Heaford, A., Horton, L., Howland, J.C., Iliev, I., Johnson, R., Jones, C., Kann, L., Karatas, A.,	Birren, B., Linton, L., Nusbaum, C. and Lander, E. Homo sapiens, clone RP11-263N17 Unpublished 2 (bases 1 to 161100)	Homo sapiens Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 161100)	AC0256593 AC0256593 GI:8705128 HTG; HTGS_PHASE1; HTGS_DRAFT. HOmo sapiens.	clone RP11-263N17, WORKING DRAFT SEQUENCE, 15	161100 bo DNA linear HTG 2		GAAAAGAACCGATTGAAAACTCTGAGAATAAAGCATTGGAATAGAAGT 2729	27	26	0 0	S	AAAATCATATCACAATTITACCTGCTCAAGAATGGAAACCTCCTCTTCCAGCTTATGATT 2562 	ACCAGGCTATAATTGAAGAAAACCTTGTATTGTGGCTGAAGAAATTAGAAGCAGGACTAG 2520	ACCAGGCTATAATTGAAGAAAACCTTGTATTGTGGCTGAAGAAATTAGAAGCAGGACTAG 2502		TTCCTCTTCTTGTTTTGGTGAATCTGCATTCAGGTGGCCAAGTATTTGCATTTCCTTCAG 2442	TAAAGAATACTCCASTGGGAGAGGAATCTTGCGGGGCATATTTTGATCCTCTGCCTCCCC 2382	TC 234	CAATATTGACACTGGTAAAGCAGAAATACTTGGATTCATTTACTCCATGCTGGTTAAATC 2322	TTCAGAAACCATTATTGATTTTGTTCAGTGATGGCACTGTAAATCCTCAATATAAAAAAG 2280	TTCAGAAACCATTATTGATTTTGTTCAGTGATGGCACTGTAAATCCTCAATATAAAAAAG 2262	ATGCACTACTGGAAATGTTTCCGGAAATCACTGTGGAAAATCTTCCCAGTTATTTCAGAC 2220	ATGCACTACTGGAAATGTTTCCGGAAATCACTGTGGAAAATCTTCCCAGTTATTTCAGAC 2202	AAATAGAGAGCATCCCACTAGCTAGCACACATGCACAAGACATAGTTCAAATAATAACAG 2160	AAATAGAGAGCATCCCACTAGCTAGCACACATGCACAAGACATAGTTCAAATAATAACAG 2142

Howland, J.C., Iliev, I., Johnson, R., Jones, C., Kann, L., Karatas, A., Klein, J., LaRocque, K., Lamazares, R., Landers, T., Lehoczky, J.,

JOURNAL

```
McCarthy, M., McEwan, P., McGurk, A., McKernan, K., McPheeters, R., Meldrim, J., Meneus, L., Mihova, T., Miranda, C., Mlenga, V., Morrow, J., Murphy, T., Naylor, J., Norman, C.H., O'Connor, T., O'Donnell, P., O'Neil, D., Olivar, T.M., Oliver, J., Peterson, K., Pierre, N., O'Neil, D., Olivar, T.M., Oliver, J., Peterson, K., Pierre, N., Plsani, C., Pollara, V., Raymond, C., Riley, R., Rogov, P., Rothman, D., Pasani, C., Santos, R., Schauer, S., Severy, P., Spencer, B., Stange-Thomann, N., Stojanovic, N., Subramanian, A., Talamas, J., Tesfalye, S., Theodore, J., Tirell, A., Travers, M., Trigillio, J., Travers, M., Trav
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Submitted (12-MAR-2000) Whitehead Institute/MIT Center for Research, 320 Charles Street, Cambridge, MA 02141, USA On Jun 25, 2000 this sequence version replaced gi:7651991. All repeats were identified using RepeatMasker: Smit, A.F.A. & Green, P. (1996-1997) http://ftp.genome.washington.edu/RM/RepeatMasker.html
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Tesfaye, S., Theodore, J., Tirrell, A., Travers, M., Trigilio, J., Vassiliev, H., Viel, R., Vo, A., Wilson, B., Wu, X., Wyman, D., Ye, W.J., Young, G., Zainoun, J., Zimmer, A. and Zody, M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequencing vector: M13; M77815; 100% of reads
Sequencing vector: M13; M77815; 100% of reads
Chemistry: Dye-terminator Big Dye; 100% of reads
Assembly program: Phrap; version 0.960731
Consensus quality: 153679 bases at least Q40
Consensus quality: 154722 bases at least Q30
Consensus quality: 158798 bases at least Q20
Insert size: 163000; agarose-fp
Insert size: 163700; sum-of-contigs
Quality coverage: 5.2 in Q20 bases; sum-of-contigs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Levine, R., Lieu, C., Liu, G., Locke, K., Macdonald, P., Marquis, N.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will be preserved.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NOTE: This is a 'working draft' sequence. It currently consists of 15 contigs. The true order of the pieces is not known and their order in this sequence record is
                                                                                                                                                                                                                                                                                                                                                                                          3393: contig of 3393 bp in length
3394 3493: gap of
3494 8261: contig of 4768 bp in length
8262 8361: gap of
8362 13937: contig of 5576 bp in length
1398 14037: gap of
100 bp
14038 23507: contig of 9470 bp in length
23508 23607: gap of
23608 30463: gap of
23608 30463: gap of
23608 30980: contig of 6756 bp in length
30364 30403: gap of
100 bp
30981 39180: gap of
100 bp
39181 47753: contig of 8617 bp in length
47754 47853: gap of
47854 59271: contig of 8573 bp in length
47854 59271: contig of 11418 bp in length
59372 71027: contig of 11656 bp in length
71128 8459: contig of 11656 bp in length
71128 84959: contig of 13832 bp in length
88450 95588: contig of 100 bp
95489 95588: contig of 100 bp
10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Contact: sequence_submissions@genome.wi.mit.edu
------ Project Information
Center project name: L7940
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Center clone name: 263_N_17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Center: Whitehead Institute/ MIT Center Center code: WIBR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Web site: http://www-seq.wi.mit.edu
                                                                                                                                                                                                        95489 95588: gap of 100 bp
95589 108075: contig of 12487 bp
108076 108175: gap of 100 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           --- Genome Center
                                                                                                                              08175: gap of 100 bp 123260: contig of 15085 bp in
                                                                  gap of
       100 bp
17033 l
þþ
       in
                                                                                                                                     length
                                                                                                                                                                                                                                                                                         length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 for Genome Research
```

```
망
                                                                                                                                  QΥ
                                                                                                                                                                   밁
                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                       S
S
                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                Db 114956 CAATTTTACCTGCTCAAGAATGGAAACCTCCTCTTCCAGCTTATGATTTTCTAAGTATGA 114897
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
Matches 1997; Conserv
                                                                                                                                                                 114776 TTGAAACTCTGAGAATAAAGCATTGGAATAGAAGTAATTGGTTTAAAGAAGCAGAAAAAT
                                             114656 TTTCCAAAATTTTTTTGGCATGATAGACTTAATTTATTTCCTTAAAGAATAATATTAAAT 114597
                                                                                                        114716
                                                                                                                                                                                                                                                                                                      2515 CAATTITACCTGCTCAAGAATGGAAACCTCCTCTTCCAGCTTATGATTTTCTAAGTATGA 2574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         misc_feature
                                                                                                                                                                                               2695 TTGAAACTCTGAGAATAAAGCATTGGAATAGAAGTAATTGGTTTAAAGAAGCAGAAAAAT
                                                                                                                                                                                                                                                          2635 ATGTGCAGGAGAATGATAAGGAACAACATGAAGATAAATCGGCAGTCAGAAAAGAACCGA 2694
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      misc_teature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                                                                     CATTTCAAGTTTGCAGACTAGTGCCATCCAATAGAATTATAATATAAGTCACATATTTA
                                                           TTTCCAAAATTTTTTTGGCATGATAGACTTAATTTATTTCCTTAAAGAATAATATTAAAT
                                                                                                                                                                                                                            140394 140493: ga
140494 161100:
                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="assembly_fragment" 47854. .59271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="assembly_fragment"
140494. .161100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="assembly_fragment"
108176. .123260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note="assembly_fragment"
85060. .95488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             vector_side:right"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 clone_end:SP6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="RP11-263N17"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       95589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note="assembly_fragment"
71128. .84959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              59372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    30464.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="assembly_fragment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               23608.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            14038.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 'note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              'clone_lib="RPCI-11 Human Male
                                                                                                                                                                                                                                                                                                                                                                                                                      44.18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .8261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .13937
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .39080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .84959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .71027
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .47753
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .108075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               30363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            23507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .140393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 embly_fragment"
31601 g 48609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ap of 100 bp
contig of 20607 bp in length

    Mismatches

                                                                                                                                                                                                                                                                                                                                                                                                                         Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                          Score 1995.8;
Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ς+
                                                                                                                                                                                                                                                                                                                                                                                                                                          ₽B
                                                                                                                                                                                                                                                                                                                                                                                                           3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1403 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BAC"
                                                                                                                                                                                                                                                                                                                                                                                                                                        <u>ب</u>
                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 161100;
                                                                                                                                                                                                                                                                                                                                                                                                           0; Gaps
                                                                                                                                                                                                2754
                  2934
                                                                                                        114657
                                                                                                                                                                                                                                                                                         114837
```

0;

```
Š
                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                               δõ
                                                                                                                                                                                                                                                                                                                                                         рь
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DЬ
                   οy
                                     В
                                                        ρy
                                                                             В
                                                                                              δÃ
                                                                                                                  Ъ
                                                                                                                                   γ
                                                                                                                                                         망
                                                                                                                                                                           δÃ
                                                                                                                                                                                               В
                                                                                                                                                                                                                 δõ
                                                                                                                                                                                                                                      멍
                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                 Q
                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
   113516
                                                                                                                                                                                                                                                                                                                                                                                               114116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   114296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              114596 CATTTCAAGTTTGCAGACTAGTGCCATCCAATAGAATTATAATATAAGTCACATATTTTA 114537
                                                                             113636
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    114476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          114536
                                                                                                                                                                                                                                                                                                                                                                            3415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3115
                                                                                                3835
                                                                                                                                                                                                                                                                                                                                                                                                                  3355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2995
GCATTTCTTACTTCCGAGTAGCCATATTTCAAGTGTTCATTGCCACATGTGGCCTGTGAC 3174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATACAACTTGATCTTTTCTAATATTTTCAGAAAGTGATGGGATAACCCTAGAAGAGGGACT
                                                                                                                                                                                                                                                                                      AAAGTAACCTGTGGCAGACTATCCCAGGAATTTTCCTGGTTCTGCTCACGTATCATGTT 3594
                                                                                                                                                                                                                                                                                                                             CAACAAAGAATTATCCTGCCCGAAATGGTAGTCGTGCCAAGGCTGAGTAACCTTGTGTTA 3534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GATATTACTTTTCACCCAGTAGTATACCCAAAATAGCGAAATATAGAAATTATTAATGAG 114417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GATATTACTTTTCACCCAGTAGTATACCCAAAATAGCGAAATATAGAAATTATTAATGAG
                                                                                       GCTCCCTCATCTGAAGCGTCTCTGAAATCTACCCTTGCAAGCTTCAGACAAATCAGTTGA 3894
                                                                                                                                                       CAGAATGATATTTATATTTTAAGTGAGTCCTAAAACCTCCTCTTATTTCTACAAGTTATA 113697
                                                                                                                                                                 CAGAATGATATTTATATTTTAAGTGAGTCTTAAAACCTCCTCTTATTTCTACAAGTTATA 3774
                                                                                                                                                                                                                                               TGAAAAATTTTGGCTATTAAAGATATGTATTAGATGGTCTTATCCTGATTATTACCTGG 3654
                                                                                                                                                                                                                                                                                                                   CAACAAAGAATTATCCTGCCCGAAATGGTAGTCGTGCCAAGGCTGAGTAACCTTGTGTTA 113937
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATATTTTACATCCTTTTTTGTACCAAGTCTTCTAAATGCAGTACATATTTTATACTT
                                                                           TGAAAAAATTTTGGCTATTAAAGATATGTATTAGATGGTCTTATCCTGATTATTACCTGG
                                                                                                                                                                                                                                                                            AAAGTAACCTGTGGCAGACTAGGTTTCCAGAATTTCCTGGTTCTGCTCACGTATCATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGATTTCTATTTGGATTAAAATTAAACTCTAATCACAGTTAACTCCACAGTGCATTCATG
                                      113517
                                                                                                                                                                                                                  3714
                                                                                                                                                                                                                                                                                                                                                                                                                                                      3354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3054
                                                                                                                                                                                               113757
                                                                                                                                                                                                                                                                                                                                                                                                                                     114117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           114177
                                                                                                                   113637
                                                                                                                                                                                                                                      113817
                                                                                                                                                                                                                                                                            113877
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      114297
```

멍

Assembly program: Phrap; version

2.0

	; ;		COMMENT	TITLE JOURNAL	REFERENCE AUTHORS	TITLE	REFERENCE AUTHORS	ORGANISM	ACCESSION VERSION KEYWORDS SOURCE	DEFINITION	RESULT 5 CNS01RGG	Db 112976	Оу 4495	Qy 4435 Db 113036	11309	Qy 4375	Qy 4315 Db 113156	Qy 4255 Db 113216	Qy 4195 Db 113276	Qy 4135 Db 113336	Qy 4075 Db 113396	Qy 4015 Db 113456	
TOH CIRC IT TO CHE OFF	site: http://www.genoscope.cns.fr/ tact: SeqRef@genoscope.cns.fr 	pe / Centre National	s.fr) lence version replaced gi:14715170.	Direc Submi BP 19		Levy,M., Eckenberg,R., Bruls,T., deBerardinis,V., Gyapay,G., Saurin,W. and Weissenbach,J. Sequencing of the human chromosome 14	<pre>1 (bases 1 to 176368) Hellig,R., Petit,J.L., Vico,V., Dasilva,C., Robert,C., Wincker,P., Brottier,P., Cattolico,L., Barbe,V., Pelletter,E., Artiguenave,F.,</pre>		AL157971 AL157971.4 GI:16944346 HTG.		176368 by DNA linear DDT 13-NOV-2	GGTTTCAGAATACCTTCACAA 112956	GGTTTCAGAATACCTTCAAAA 4515	ACCTTTGTCAGCAATTTTGACAGTCATTAATGTTTGTCATAATTTTAAATAAA	13	TTATTAGAAAATGCTAATTAAGTACCAGCACATAGAAACATGAAATTGCTTAGTCATTGT 4434	TGGGAACAATGAGAGTGAACTCTAAATATAGGTTGTAGTAATAAAACATCATTAGCCTAA 4374	TTTTTCCTGTAGCATGTGATGCCTGATTAAACTCATTTTCATTTGCTTTTATTTCTAATA 4314 	GTGCATMTATTTCCTTATAACATAGACCGTTGCTACTCTCAGCACCCTCTCCTCAATTT 4254 :	CCTGATACAACTGATTTTTATAACTGAAATTTAAGGAATCTAACAGCTAAAACTCAGTAA 4194 CCTGATACAACTGATTTTTATAACTGAAATTTAAGGAATCTAACAGCTAAAACTCAGTAA 113277	TITITCTTITAATAICTACITGATATCTIGTTCTITAAAITTTCTTCACATAIGGTTTG 4134 	TTTGCTCTGTGCATTTTTTGAGACATTTGTTGAGAATATTCTATTTGGTGCTCTACTGTA 4074 	

```
BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                       Db 154334 CAATTTTACCTGCTCAAGAATGGAAACCTCCTCTTCCAGCTTATGATTTTTCTAAGTATGA 154393
                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
Matches 1997; Conserva
                                                                                                                                                                                                                                  154874
                                                                 154814
                                                                                                           154754
                                                                                                                                                  154694 CATTTCAAGTTTGCAGACTAGTGCCATCCAATAGAATTATAAATATAAGTCACATATTTTA 15475
                                                                                                                                                                                            154634
                                                                                                                                                                                                                                                                                                                       154454
                                                                                                                                                                                                                                                                                                                                                              3115 GCATTTCTTACTTCCGAGTAGCCATATTTCAAGTGTTCATTGCCACATGTGGCCTGTGAC
                                                                                      2995
                                                                                                                     2815
                                                                                                                                                                                                                                                                                                                                                                          2515 CAATTITACCTGCTCAAGAATGGAAACCTCCTCTTCCAGCTTATGATTTTCTAAGTATGA 2574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 source
                                                                                                                                                                                          GATATTACTTTTCACCCAGTAGTATACCCAAAATAGCGAAATATAGAAATTATTAATGAG
                                                                                                                                                              CATTTCAAGTTTGCAGACTAGTGCCATCCAATAGAATTATAATATAAGTCACATATTTTA 2934
                                                                                                                                                                                                                                                                                                                     GATATTACTTTCACCCAGTAGTATACCCAAAATAGCGAAATATAGAAATTATTAATGAG
                                                                                                          TTTAAAATTTTCTAGTAACTACATTAAACAAAGTAAAAGTGAGCAGGGCAAAATAATTTT 154813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Overall quality chart Range : bases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Quality coverage: 7.53x in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Percentage
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          29
39
39
59
69
89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /organism="Homo sapiens"
/db_xref="taxon:9606"
/chromosome="14"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              e of bases with a quality value >= Location/Qualifiers
1. .176368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /clone="R-93311"
/clone_11b="RPCI-11"
31876 c 34551 g 60063
                                                                                                                                                                                                                                                                                                                                                                                                                                                         44.18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 1995.8;
Pred. No. 0;
1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q20 bases; sum-of-contigs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                ω
••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    40 :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 176368;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     99
                                                                                                                                                                                                                                                                                                                                                                                                                                                0; Gaps
3174
                                                                                                                                                                                                               2874
                                                                                                                                                                                                                                                                                                                                                                                    2634
                                          3114
                                                                                                                              2994
                                                                                                                                                                                                                                                         2814
                      154933
                                                                154873
                                                                                                                                                                                           154693
                                                                                                                                                                                                                                    154633
                                                                                                                                                                                                                                                                                                                      154513
                                                                                                                                                                                                                                                                                                                                                                                                                                                0
```

οy

망

Š

ş ₽ οy 망 Ş Вþ Š 망 Qy В Ş 망 Š В Ş DЪ Qγ

4254	GTGCATMTATTTCCTTATAAACATAGACCCGTTGCTACTCTCAGCACCCTCTCCTCAATTT	4195	γQ	
4194 156013	CCTGATACAACTGATTTTATAACTGAAATTTAAGGAATCTAACAGCTAAAACTCAGTAA	4135 155954	DP QA	
4134 155953	TTTTCTTTTAATATCTACTIGATATCTTGTTCTTTAAATTTTCTTCACATATGGTTTG	/ 4075) 155894	Db Qy	
4074 155893	TTTGCTCTGTGCATTTTTTGAGACATTTGTTGAGAATATTCTATTTGGTGCTCTACTGTA	/ 4015 5 155834	Db Qy	
4014 155833	TTTCATTCCAAATCACTTAGCTGTTAGACTGATCTGTTTGTAGCAGTTGTTTGT	7 3955 5 155774	Db Qy	
3954 155773	TCTCCCTGAGCCACACGGCCTCATTCTGTGAGGGAGAGAGA	7 3895 5 155714	Qy Db	
3894 155713	GCTCCCTCATCTGAAGCGTCTCTGAAATCTACCCTTGCAAGCTTCAGACAATCAGTTGA	/ 3835 5 155654	Qy dd	
3834 155653	TGGCTAAATTTCAGATTGAACAGGGATTCAGCATTCTGCCATCTCCTCATGGAAAGAGAG	7 3775 5 155594	Qy Db	
3774 155593	CAGAATGATATTTATATTTTAAGTGAGTCTTAAAACCTCCTCTTATTTCTACAAGTTATA	7 3715 5 155534	Db Qy	
3714 155533	ATACAACTTGATCTTTTCTAATATTTTCAGAAAGTGATGGGATAACCCTAGAAGAGGACT	7 3655 5 155474	Qy Db	
3654 155473	TGAAAAATTTTGGCTATTAAAGATATGTATTAGATGGTCTTATCCTGATTATTACCTGG	7 3595 5 155414	Db Qy	
3594 155413	AAAGTAACCTGTGGCAGACTAGGTTTCCAGAATTTCCTGGTTCTGCTCACGTATCATGTT	7 3535 5 155354	da Qy	
3534 155353	CAACAAAGAATTATCCTGCCCGAAATGGTAGTCGTGCCAAGGCTGAGTAACCTTGTGTTA	7 3475 5 155294	4d 40	
3474 155293	GACATTTAGTGAGTAGAGGCCATGGATCCTGCTAAATAACCTGCATTGGACAGCGCCCCA	7 3415 5 155234	Db Qy	
3414 155233	TCAGGGGATATTTAGCAATTGTCGGGAGACATTTTTGATGTCATGACTAGGGCAGTTATT	y 3355 5 155174	Оу	
3354 155173	CAGCTGACAGTTATATTTGTTTTATTGGAGTCATGATATTAAAATCAGCGTTTGTCAACC	y 3295 5 155114	Qy Db	
3294 155113	TGATTTCTATTTGGATTAAAATTAAACTCTAATCACAGTTAACTCCACAGTGCATTCATG	y 3235 5 155054	Qy Db	
3234 155053	TACTGTATTGGACAGTTCAGTACTAGACAAAAACTAGCATAATTAACTTAGTTCTAGCCA	y 3175 5 154994	Qy Db	
154993		o 154934	Db	

DB 10; 326;

1496 74;

Indels Length

Gaps

6;

2160

180

120

2340

240

```
REMARK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DEFINITION
ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 6
BC027108
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qγ
                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               156074
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           156014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4315
                                                                                                                                                                        source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGTTTCAGAATACCTTCAAAA 4515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGGGAACAATGAGAGTGAACTCTAAATATAGGTTGTAGTAATAAAACATCATTAGCCTAA 4374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTTTTCCTGTAGCATGTGATGCCTGATTAAACTCATTTTCATTTTGCTTTTATTTCTAATA 4314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTGCATATATTTCCTTATAACATAGACCCGTTGCTACTCTCAGCACCCTCTCCTCAATTT 156073
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGTTTCAGAATACCTTCACAA 156334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTATTAGAAAATGCTAATTAAGTACCAGCACATAGAAACATGAAATTGCTTAGTCATTGT 4434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGGGAACAATGAGAGTGAACTCTAAATATAGGTTGTAGTAATAAAACATCATTAGCCTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTTTTCCTGTAGCATGTGATGCCTGATTAAACTCATTTTCATTTTGCTTTTATTTCTAATA 156133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTATTAGAAAATGCTAATTAAGTACCAGCACATAGAAACATGAAATTGCTTAGTCATTGT
                                                                                                                                                                                                                          Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov Series: IRAK Plate: 54 Row: d Collumn: 15 This clone was selected for full length sequencing because it passed the following selection criteria: Hexamer frequency ORF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Email: cgapbs-r@mail.nih.gov
Tissue Procurement: Jeffrey Green M.D.
Tissue Procurement: Jeffrey Green M.D.
CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Arrayed by: The I.M.A.G.E. Consorthum (LLNL)
DNA Sequencing by: Baylor College of Medicine Human Genom
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Submitted (04-APR-2002) National Institutes of Health, Mammalian Gene Collection (MGC), Cancer Genomics Office, National Cancer Institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2590,
                                                                                                                                                                                                            passed the following analysis.
                                                                                                                                                                                                                                                                                                                                           Contact: amg@bcm.tmc.edu
Gunaratne, P.H., Garcia, A.M., Lu,
Yoon, V.S., Kowis, C.R., Lawrence,
Richards, S., Gibbs, R.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                           Center code: BCM-HGSC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NIH-MGC Project URL: http://mgc.nci.nih.gov
Contact: MGC help desk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BC027108
BC027108.1
                                                                                                                                                                                                                                                                                                                                                                                                                     Web site: http://www.hgsc.bcm.tmc.edu/cdna/
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequencing Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        house mouse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (bases 1 to 1496)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  27108 1496 bp mRNA musculus, clone IMAGE:5356411, mRNA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        musculus
               /clone="IMAGE:5356411"
/tissue_type="Mammary tumor. C3(1)-Tag model.
ductal carcinoma. 5 month old virgin mouse."
/clone_lib="NCI_CGAP_Mam6"
/lab_host="DH10B"
                                                                                                             /organism="Mus musculus"
/db_xref="taxon:10090"
/map="FVB/N"
/note="Vector: pCMV-SPORT6"
                                                                                                                                                                                      ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                             s :
                                                                                                                                                                                                                                                                                                                                                             Hulyk, S.W.,
Martin, R.G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                partial cds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    linear
                                                                                                                                                                                                                                                                                                                                                             Hale, S, Muzny,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ROD
                                                                       Infiltrating
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      07-AUG-2002
                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    156193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             156313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        156253
                                                                                                                                                                                                                                                                                                                                                               U 3
                                                                                                                                                                                                                                                                                                                                                               3 -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mus
                                                   δÃ
                                                                                         В
                                                                                                                           Qy
                                                                                                                                                                    В
                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                  δõ
                                                                                                                                                                                                                                                                                                                       B
                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                   QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2761
                                                                                                                                                                                                                                                                                    2701
                                                                                                                                                                                                                                                                                                                                                             2641
                                                                                                                                                                                                                                                                                                                                                                                                                                         2581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            421
                                                                                                                                                                      661
                                                                                                                                                                                                                                                                                                                         541
                                                                                                                                                                                                                                                                                                                                                                                                   481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61
                                       CTCTGAGAATAAAGCATTGGAATAGAAGTAATTGGTTTAAAGAAGCAGAAAAATCATTTA 2760
                                                                                                                                                                                                                                                                                                                                             AGGAGAATGATAAGGAACAACATGAAGATAAATCGGCAGTCAGAAAAGAACCGATTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                     TACCTGCTCAAGAATGGAAACCTCCTCTTCCAGCTTATGATTTTTCTAAGTATGATAGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAAACCTTGTATTGTGGCTGAAGAAATTAGAAGCAGGACTAGAAAATCATATCACAATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGAGAGGAATCTTGCGGGCATATTTTGATCCTCTGCCTCCCCCTTCCTCTTCTTTTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGCAGAAATACTTGGATTCATTTACTCCATGCTGAAATCTAAAATCTAAAGAATACTCCAGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTTTGTTCAGTGATGGCACTGTAAATCCTCAATATAAAAAAGCAATATTGACACTGGTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTCCGGAAATCACTGTGGAAAATCTTCCCCAGTTATTTCAGACTTCAGAAACCATTATTGA 2220
                                                                                                                                                                                                        GACGTGATAAAGAGTTAGGATGCTCAAAAGTGAACTAATTTTATAGGGCTGTGGTTTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGTCTGCCCAGGAATGGAAACCTCCTCTTCCTGCTTTGATTTTCTGAATATGATGATGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GACAGAAGCAGCTGGATTCGTTTACCCCTTGCTGGTTAAATCTGAAGAACACTCCCGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCTTGTTTAGTGGTGGCAGCATAAACCCTCAGTACAGGAACACGATCCTGGCACTGGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTCCAGAAATCACTGTGGAAAATCTTCCCACATATTTAAGATTTCAGAGACCGCTACTTC
                 ATCTCT - - AGACAAGTGCCATTGAATGGGCTTGTGATACAAATGAC - - -
                                                                                           CTCTCTGTGGCACAGGAAACCCGAGATCAAATCTGTAAAGGAACAGGACTAAATTATGCC
                                                                                                                               AAATTTTTTTGGCATGATAGACTTAATTTATTTCCTTAAAGAATAATATTAAATCATTTC
                                                                                                                                                                      ACCACGACAAGGAGTTATGAGCGG-----
                                                                                                                                                                                                                                                TGCTGAGAATAAAGCGCTGGAACACTGCCAACTGGCCCAAAGACACACAGGAGCCTTTTC
                                                                                                                                                                                                                                                                                                                         AGGAGAGTGCTGAGCTGCAGCCTGGAGACAGATCAACAGCCAGGAGAGAGCCGGTCGAAA
                                                                                                                                                                                                                                                                                                                                                                                                   AAAGCCTTGTGTGGGCTGAAACATTTACAAGCGGGACTAGAAAATCCCATCACAGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGAATCTGCATTCGGGTGGCCAAGTGTATGCATTTCCTTCATCCCAGTCTGTGACGGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGAATCTGCATTCAGGTGGCCAAGTATTTGCATTTCCTTCAGACCAGGCTATAATTGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGAGGGGCATCTTGAAGGCATATTTTGGCCGTCTGCCACCACCTTCCTCAGCTGCTGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            756;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ۵
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FHHDKEL"
a 329 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /codon_start=3
/product="Unknown (protein for IMAGE:5356411)"
/protein_id="AAH77108.1"
/protein_id="AAH77108.1"
/db_xref="GI:20071984"
/translation="DTTLVQDMAQILANALLEAFPEITVENLPTYLRFQRPLLLLFSGGSINDYRNTILALVRQXCDSSTPCVHLNLKNTPVGRGILKAYEGRLPPLPOLLLVNLHSGGQYYAFPSSQSYTEQSLVLWLKHLQAGLENPITVLSAQEWKPPLPAFDFLNMMDA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PTSQAPTKKVLECQKEAEVQESAELQPGDRSTARREPVEMLRIKRWNTANWPKDTQEP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 426.4; D:
Pred. No. 1.2e-
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        322 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            410 t
```

-GCCTCGTGGGATGGC

699

2820

660

2880

759

2700

600

480

2580

420 2520

2640

540

2460

360

2400

300

-ATGTAAA

810 2940

밁 Ş

δÃ 밁 δÃ 밁 QΥ 밁 Ş

Ş В

В

```
ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 7
AC021131
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1067 GCATTTGAATCAAATT 1082
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          892
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     811
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 947
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                852
                                                                                         Chemistry: Dye-terminator Big Dye: 0% of reads Assembly program: Phrap; version 0.990319
Consensus quality: 192295 bases at least Q40
Consensus quality: 195796 bases at least Q30
Consensus quality: 195796 bases at least Q20
Insert size: 209000; agarose-fp
Insert size: 202006; sum-of-contigs
Quality coverage: 4.50 in Q20 bases; sum-of-conti
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTTACTTCCGAGTAGCCATATTTCAAGTGTTCATTGCCACATGTGGCCTGTGACTACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATTGGACAGTTCAGTACTAGACAAAAACTAGCATAATTAACTTAGTTCTAGCCATGATTT 3240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTATTTGGATTAAAAT 3256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCTCACTAAGGAGATCCGTTTTTGAGGGCTTATTTGCCATAGGTGGTACATGACAGTTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ---TTACTTTTAATGTGAAGTCTTCAAAATACAGTCC--ATTTCACACTTAATGCCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACTTTTCACCCAGTAGTATACCCAAAATAGCGAAATATAGAAATTATTAATGAGATATTT 3060
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATTTCTTAGTAGTTACTCTTAAAAACCGTAAACCGAGCAGA----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATTTTCTAGTAACTACATTAAACAAAGTAAAAGTGAGCAGGGCAAAATAATTTTGATATT 3000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ----TAAACCCCAGACAGCTTAATTACTACGAAAATGTTGACAT----
                                                                                                                                                                                                                                                           SEQUENCE,
AC021131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Submitted (14-JAN-2000) Genome Sequencing Center, Washington University School of Medicine, 4444 Forest Park Parkway, St. Louis, MO 63108, USA
On Jun 16, 2000 this sequence version replaced gi:7534281.
                                                                                                                                                                                                                                                                                                                                                                                             Center: Washington University Genome Sequencing Center code: WUGSC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2 (bases 1 to 204606)
Waterston, R.H.
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HTG;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The sequence of Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Waterston, R.H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AC021131.5 GI:8569986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AC021131
NOTE: This is a 'working draft' sequence. It currently consists of 27 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (bases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             204606 bp DNA linear HTG
sapiens chromosome 14 clone RP11–382120, WORKING DR
ENCE, 27 unordered pieces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HTGS_PHASE1; HTGS_DRAFT.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 to 204606)
                                                                                                                                                                                                                                                                                                                                                                                                                                 Genome Center -----
                                                                                             agarose-fp
sum-of-contigs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DRAFT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          07-JUL-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        946
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              891
                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                     misc_feature
                    misc_feature
                                                                                             misc_feature
                                                                                                                               misc_feature
                                                         misc_feature
                                                                                                                                                                                                                                                                 source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will be preserved.
                                                                                                                                                                                                                                                                                                   164004
                                                                                                                                                                                                                                                                                                                      77844
88108
88208
99344
99444
112628
112728
112707
125107
136351
136451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            70823
77744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                42826
48146
48246
52586
52686
52686
58397
58497
64866
64966
70723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8589
81633
11733
11733
11733
11707
14001
1407
11407
116973
17073
21190
21190
21190
25903
25903
25903
26003
26003
279018
33617
33717
33717
33724
42726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4334
6060
6160
                                                         /note="assembly_name:Contig15"
4334. .6059
                                                                                                                                                                                                                                                               Location/Q
1. .204606
                                                                                             /note="assembly_name:Contig14"
2627. .4233
                                                                                                                                                                                                          /organism="Homo sapiens"
/db_xref="taxon:9606"
/chromosome="14"
 /note="assembly_name:Contig17"
                                      /note="assembly_name:Contig16"
                                                                                                                                               /note="assembly_name:Contigl3"
                                                                                                                                                                                       /clone="RP11-382I20"
                                                                                                                                                                                                                                                                                            11732: gap of unknown length
14100: contig of 2268 bp in leng
14100: gap of unknown length
16972: contig of 2872 bp in leng
17072: gap of unknown length
21089: contig of 4017 bp in leng
21189: gap of unknown length
25902: contig of 4713 bp in leng
26002: gap of unknown length
25917: gap of unknown length
33616: contig of 3815 bp in leng
29917: gap of unknown length
33716: gap of unknown length
3723: contig of 3507 bp in leng
4825: contig of 5402 bp in leng
4825: contig of 5402 bp in leng
4825: gap of unknown length
48145: contig of 5320 bp in leng
48245: gap of unknown length
58396: contig of 5320 bp in leng
58496: gap of unknown length
64965: gap of unknown length
64966: contig of 12244 bp in 16
64003: gap of unknown length
640606: contig of 1244 bp in 16
64003: gap of unknown length
640606: contig of 40603 bp in 16
                        . 8588
                                                                                                                                                                                                                                                                                  /Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  contig
gap of
contig
gap of
contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  unknown
of 2429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             unknown
of 2944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      of 1726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               đđ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        dq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            length
                                                                                                                                                                                                                                                                                                                                      length
                                                                                                                                                                                                                                                                                                                                                                          length
                                                                                                                                                                                                                                                                                                                                                                                                              length
                                                                                                                                                                                                                                                                                                                                                                                                                                                   length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       length
```

misc_feature

```
BASE COUNT
ORIGIN
 밁
                          Qy
                                                  Ъ
                                                                                Q
                                                                                                                    Ъ
                                                                                                                                              Qy
                                                                                                                                                                             Ф
                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                           Вþ
                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                     Best
                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                      29819
                                                                                                                                                                                                                                            29699
                                                                                                                                                                                  29759
                                                                                                                                                  4112
                                                                                                                                                                                                                                                         3995 TAGCAGTTGTTTGCTCCATTTTTGCTCCTGTGCATTTTTTGAGACATTTTGTTGAGAATATT 4054
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       misc_feature
                                                                                                                                                                                               4055 CTATTTGGTGCTCTACTGTATTTTTTTTTTAATATCTACTTGATAT----CTTGTTCTTT 4111
                                                                                                                                                                                                                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                           misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       misc_feature
                                                                                                                                                                                                                                                                                                                     Local
            TCTCAGCACCCTCTCCTCAATTTTTTTTCCTGTAGCATGTGATGCCTGATTAAACTCATT
                                                                                                                                                                                                                                           TATTAATTGATTACCAAAATATTTAAGTGCAGATGTCCTATATAATTAGTGGTTCAAAAT 29758
TCTCAGCACCCTCTCCTCAATTTTTTTTCCTGTAGCATGTGATGCCTGATTAAACTCATT
                                                        AAATTTTCTTCACATATGGTTTGCCTGATACAACTGATTTTTATAACTGAAATTTAAGGA 4171
                                                                                      ATCTAACAGCTAAAACTCAGTAAGTGCATMTATTTCCTTATAACATAGACCCGTTGCTAC 4231
                                                                                                                                                                             AAATCTGTATCTCTTATGACATGGATACTAAAGAATGTCATTGATATATGCACATGGCTN
                                                                                                                                                                                                                                                                                                     al Similarity 68.3
358; Conservative
                                                                                                                                                                                                                                                                                                                                                                                 64151
                                                                                                                                                                                                                                                                                                                                                                                 Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="assembly_name:Contig30" 64966. .70722
                                                                                                                                                                                                                                                                                                                                                                           note="assembly_name:Contig38"
164004...204606
/note="assembly_name:Contig39"
38935 c 39288 g 59611 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="assembly_name:Contig31"
70823. 77743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note="assembly_name:Contig24"
33717. .37223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="assembly_name:Contig23"
29918. .33616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="assembly_name:Contig20"
17073. .21089
                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="assembly_name:Contig37"
136451. .163903
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         125107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      clone_end:SP6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="assembly_name:Contig32"
77844. .88107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 52686.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="assembly_name:Contig27"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="assembly_name:Contig25"
37324. .42725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  26003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="assembly_name:Contig18"
11733. .14000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="assembly_name:Contig29"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="assembly_name:Contig28"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              48246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note="assembly_name:Contig26"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="assembly_name:Contig21"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="assembly_name:Contig19"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 note="assembly_name:Contig36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    112728. .125006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="assembly_name:Contig35"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="assembly_name:Contig34"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="assembly_name:Contig33"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note="assembly_name:Contig22"
26003. .29817
                                                                                                                                                                                                                                                                                                                  68.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     _side:right"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .58396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  . 25902
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .52585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .16972
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .48145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .136350
                                                                                                                                                                                                                                                                                                    Score 307.2; DB 2;
Pred. No. 1.5e-51;
0; Mismatches 163;
                                                                                                                                                                                                                                                                                                                                                                               2621 others
                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                               Length
                                                                                                                                                                                                                                                                                                                                  204606;
                                                                                                                                                                                                                                                                                                    'n
                                                                                                                                                                                                                                                                                                    Gaps
                            4291
                                                          29938
                                                                                                                                                                               29818
29998
```

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 8
AX079596
                  ρ
                                           B
                                                                Qy
                                                                                       Вþ
                                                                                                             Qγ
                                                                                                                                      B
                                                                                                                                                          Qy
                                                                                                                                                                                   B
                                                                                                                                                                                                         20
                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                     Qy
                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Д
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                                                                      BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VERSION
                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           30179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        30119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      30059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4292
                                                                                                                                                                                                                                                                                                                                                                                                                        source
                                                                                                                                                                                                                                                                               467
                    471
                                             407
                                                                   411
                                                                                         347
                                                                                                                351
                                                                                                                                       289
                                                                                                                                                             291
                                                                                                                                                                                     229
                                                                                                                                                                                                           231
                                                                                                                                                                                                                                  173
                                                                                                                                                                                                                                                        171
                                                                                                                                                                                                                                                                                                       Local Similarity
            CCTCAGAAATATTTTAGTACATTGCAACCAGG 502
                                                        TCTTTTGTCATAATGTGCATTTTTTACATGCCAACAGTAAACTCTTTACCAGAACTGAGT
                                                                                                                                      TTCAAGAAAATTTGAAAGTAGCAAAATAGAAAATAAAGAATTAACAGCAGATACAGAGG
                                                                                                                                                                                                                                CCCGGCCGCAAGGTCCGGGCCAATACATAGTCATCAGTAG----AAACTTCTTGAAGTTG
                                                                                                                                                                                                                                                       CCCCGCCCGCAGGTCCCGGGCAGATAACATAGATCATCAGTAGAAAACTTCTTGAAGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CATAATTTAAATAAAGTGTCTGGGTTTCAGAATACCTTCACAA 30222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CATAATTTTAAATAAAGTGTCTGGGTTTCAGAATACCTTCAAAA 4515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACATGAAATTGCTTAGTCATTGTACCTTTGTCAGCAATTTTGACAGTCATTAATGTTTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTAATAAAACATCATTAGCCTAATTAGAAAATGCTAATTAAGTACCAGCACATAGAA 4411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCTCAGATACAACTGCAGCTGATAATGTTTTCCGGCTTCAATGTCTTTAGAGTTGGGATC
                                                                                                                GCTCAGATACAACTGCAGCTGATAATGTTTTCCGGCTTCAATGTCTTTAGAGTTGGGATC
                                                                                                                                                                                                          TTCAAGAAAATTTGAAAGTAGCAAAATAGAAATAAAGAATTAACAGCAGATACAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACATGAAATTGCTTAGTCATTGTACCTTTGTCAGCAATTTTGACAGTCATTAATGTTTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTAATAAAACATCATTAGCCTAATTATTAGAAAATGCTAATTAAGTACCAGCACATAGAA
                                             TCTTTTGTCATAATGTGCATTTTTTACATGCCAACAGTAAACTCTTTACCAGAACTGAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AX079596
Sequence 34(
AX079596
AX079596.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalla; Eutheria; Primates; Catarrhini; Hominidae; 1 (bases 1 to 547)
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human polypeptides and methods for the Patent: WO 0107611-A 340 01-FEB-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                               Genentech, Inc. (US)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Baker, K.P., Goddard, A.
                                                                                                                                                                                                                                                                                                                                                                                       155
                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                       þ
                                                                                                                                                                                                                                                                                                                                                                                  /organism="Homo sapiens"
/db_xref="taxon:9606"
117 c 131 g 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       340 from Patent
                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
1. .547
                                                                                                                                                                                                                                                                                                                                        6.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GI:13159156
                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                        Score 290;
Pred. No. '
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               and Wood, W.I.
                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       547 bp
W00107611.
498
                                                                                                                                                                                                                                                                                                                                                                                       139
                                                                                                                                                                                                                                                                                                                                        4e-48;
                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                       ~
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DNA
                                                                                                                                                                                                                                                                                                                                                   6;
                                                                                                                                                                                                                                                                                                                              37;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    use thereof
                                                                                                                                                                                                                                                                                                                                                 Length 547;
                                                                                                                                                                                                                                                                                                                                                                                       Ģ
                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  linear
                                                                                                                                                                                                                                                                                                                                                                                       others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Euteleostomi;
                                                                                                                                                                                                                                                                                                                             7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  22-FEB-2001
                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                     170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4471
                                                                   470
                                                                                                              410
                                                                                                                                                                                                                                                                               172
                                              466
                                                                                                                                                                                    288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    30058
                                                                                          406
                                                                                                                                       346
                                                                                                                                                             350
                                                                                                                                                                                                          290
                                                                                                                                                                                                                                  228
                                                                                                                                                                                                                                                       230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        30178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      30118
                                                                                                                                                                                                                                                                                                                             ω
••
```

```
REFERENCE
AUTHORS
TITLE
JOURNAL
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 9
AC021131/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequencing vector: M13; 100%
Sequencing vector: M13; 100%
Sequencing vector: plasmid; 0%
Chemistry: Dye-primer ET; 100% of reads
Chemistry: Dye-terminator Big Dye; 0% of reads
Assembly program: Phrap; version 0.990319
Consensus quality: 192295 bases at least Q40
Consensus quality: 192796 bases at least Q30
Consensus quality: 197546 bases at least Q30
Consensus quality: 197546 bases at least Q20
Insert size: 209000; agarose-fp
Insert size: 202006; sum-of-contigs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             204606 bp DNA linear HTG 07-HOMO sapiens chromosome 14 clone RP11-382I20, WORKING DRAFT SEQUENCE, 27 unordered pieces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Quality coverage: 4.50 in Q20 bases; agarose-fp Quality coverage: 4.58 in Q20 bases; sum-of-contigs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Center: Washington University Genome Sequencing Center Center code: WUGSC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Direct Submission
Submitted (14-JAN-2000) Genome Sequencing Center, Washington
University School of Medicine, 4444 Forest Park Parkway, St.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Waterston, R.H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE, 27 unordered AC021131 AC021131.5 GI:8569986 HTG; HTGS_PHASE1; HTGS_
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Center project name: H_NH0382I20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The sequence of Homo sapiens clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Web site:http://genome.wustl.edu/gsc/index.shtml
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Waterston, R.H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo
                                                                                                                                                                                                                                                                                                                                                                                            NOTE: This is a 'working draft' sequence. It currently consists of 27 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence.
                                                                                                                                                                                                                                                                                                                                                                 as soon as it is available and the accession number will be preserved.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     63108,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Jun 16, 2000 this sequence version replaced gi:7534281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (bases 1 to 204606)
                1260
2527
2627
4234
4334
6060
6160
8589
11633
11173
11473
116973
217073
225903
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HTGS_PHASE1; HTGS_DRAFT.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       USA
                8588:
8688:
11632:
11732:
14000:
14100:
16972:
17072:
17072:
21189:
25902:
                                                              1359 contig

1359 contig

2526 contig

2626 gap of

4233 contig

4333 gap of

6059 contig

6059 contig

8588 contig

8688 gap of

11632 gap of

11632 gap of

14000 contig

14100 gap of

14100 gap of

14100 gap of

14100 gap of

14100 contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Project Information
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Genome Center ------
                              gap of contig
                                                                                                                                                                    ig of 1259 bp in length
of unknown length
ig of 1167 bp in length
of unknown length
of 1607 bp in length
of unknown length
ig of 1726 bp in length
of unknown length
                                 unknown
of 4713
                                                                   of.
                                                                                                     of
                                                                                                                                       0f
                                                                                     unknown
                                                                                                                     unknown
                                                                                                                                                         unknown
                                                                   4017
                                                                                                   2872
                                                                                                                                       2268
              bp in length bp in length
in length
                              length
                                                                  length
                                                                                                   length
                                                                                                                                     length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HTG 07-JUL-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Louis,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
misc_feature
                                 misc_feature
                                                                   misc_feature
                                                                                                     misc_feature
                                                                                                                                     misc_feature
                                                                                                                                                                       misc_feature
                                                                                                                                                                                                           misc_feature
                                                                                                                                                                                                                                           misc_feature
                                                                                                                                                                                                                                                                           misc_feature
                                                                                                                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                                                                                                                                                               misc_feature
                                                                                                                                                                                                                                                                                                                                                                                 misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                   misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                     misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               64866
64966
70723
70723
70823
77744
88108
88208
88208
88208
112728
112728
112728
1125007
1125107
1136451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           29818
239118
336117
337217
37224
42726
42826
442826
442826
52826
52886
52886
52886
52886
52886
52886
                              /note="assembly_name:Contig28" 52686. .58396
                                                                                                                                                                       /note="assembly_name:Contig24"
33717. .37223
                                                                                                                                     /note="assembly_name:Contig25" 37324 . .42725
                                                                                                                                                                                                                                                                                                             /note="assembly_name:Contig20"
17073. .21089
                                                                  /note="assembly_name:Contig27"
48246. .52585
                                                                                                                                                                                                         /note="assembly_name:Contig23"
29918. .33616
                                                                                                                                                                                                                                           /note="assembly_name:Contig22"
26003. .29817
                                                                                                                                                                                                                                                                           /note="assembly_name:Contig21"
21190. .25902
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="assembly_name:Contigl3"
1360. .2526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="Homo sapiens"
/db_xref="taxon:9606"
/chromosome="14"
                                                                                                                                                                                                                                                                                                                                                   14101.
                                                                                                                                                                                                                                                                                                                                                            /note="assembly_name:Contig19"
                                                                                                                                                                                                                                                                                                                                                                                              /note="assembly_name:Contig18"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="assembly_name:Contig15"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note="assembly_name:Contig14"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1. .204606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /clone="RP11-382I20"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   note="assembly_name:Contig16"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             . .1259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      42825: gap of unknown length
48145: contig of 5320 bp in len
48245: gap of unknown length
52385: contig of 4340 bp in len
52385: contig of 4340 bp in len
52385: contig of 6340 bp in len
52385: gap of unknown length
53396: contig of 5711 bp in len
54965: gap of unknown length
64965: gap of unknown length
70722: contig of 5757 bp in len
70822: gap of unknown length
7743: contig of 6921 bp in len
77843: gap of unknown length
88107: contig of 10264 bp in le
88207: gap of unknown length
18107: contig of 1136 bp in le
99443: gap of unknown length
112627: contig of 11364 bp in le
112727: gap of unknown length
112627: contig of 11244 bp in le
112628: contig of 12749 bp in le
1126106: gap of unknown length
1136350: contig of 1244 bp in le
1136450: gap of unknown length
1164003: gap of unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                     .8588
                                                                                                                                                                                                                                                                                                                                                                                                                       .11632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .4233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         . 6059
                                                                                                                                                                                                                                                                                                                                                   .16972
                                                                                                                                                                                                                                                                                                                                                                                     .14000
                                                                                                                                                                                                                                                                                                                                                                                                                               assembly_name:Contig17"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gap of
contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               unknown
of 5402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 unknown
of 3507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 length
bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             length
bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   length
```

```
δÃ
                                                                                                                                            рь
                             В
                                                    δ
                                                                                      밁
                                                                                                               Š
                                                                                                                                                                       Ş
                                                                                                                                                                                                      B
                                                                                                                                                                                                                              δô
                                                                                                                                                                                                                                                            DЬ
                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                         Qy
                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ф
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
Matches 544; Conserv
                                                                                                                                             1419
  2206
                               1299
                                                           2146
                                                                                                                                                                           2026
                                                                                                                                                                                                        1479
                                                                                                                                                                                                                                  1970
                                                                                                                                                                                                                                                             1539
                                                                                                                                                                                                                                                                                          1916
                                                                                                                                                                                                                                                                                                                      1599
                                                                                                                                                                                                                                                                                                                                                  1856
                                                                                                                                                                                                                                                                                                                                                                             1659
                                                                                                                                                                                                                                                                                                                                                                                                          1829
                                                                                                                                                                                                                                                                                                                                                                                                                                      1719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1751
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1839
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               misc_teature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                   CAGCTTCATTATAAGATCTCTGAATGTTTAGGTCTTTAGAAGTTCTAATTCTCAGACTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TAAGCAAAATGTTACTGAATTTCCTATCATAAAGATGTACAAGAAAGGCGAGAACCCAGT 1750
 AGAAACCAT - TATTGATTTTGTTCAGTGATGGCACTGTAAATCCTCAATATAAAAAAG - -
                            NNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNTGTCGTAGACTTCTTGGTTT
                                                        CACTACTGGAAATGTTTCCGGAAATCACTGTGGAAAATCTTCCCAGTTATTTCAGACTTC 2205
                                                                                                               TAGAGAGCATCCCACTAGCTAGCACACATGCACAAGACATAGTTCAAATAATAACAGATG
                                                                                                                                                                       CAACCAAATATGCTGCAAGTCTTCCAGCCCTGCTGCTTGCCAGACACACAGAAGGCAAAA 2085
                                                                                                                                                                                                                        CCTAAAAGGATATGTTATCACTGGAATTTATTCTGAAGAAGATGTTTTGCT----ACTGT
                                                                                                                                            ATTTGTAATATAGTTATATGTTTATCCAGCAACAGGATTTCATATCCAGTGAATATAACA
                                                                                                                                                                                                                                                                                    ATTTAGTCCAACCATGAAAACAGCAAAAGAAGATTTT-----AGTGAAGCAGGAAACTA 1969
                                                                                                                                                                                                                                                                                                                                      TTTAAGTGGGGAATTATATAAAGACCTCATCTTGTATTCTAGTGTGTCAGTATTGGGACT
                                                                                                                                                                                                                                                                                                                                                                             GCTAACACTTAAAATAGGTTAAGGAAGATACTAGAATTGAGATCACAAAATGAATATTTA
                                                                                                                                                                                                                                                                                                                                                                                                       TATTGTTTGCTATGTTTAGTATGCTTTTTTTTTTACAAACTGAAAATATCTTAAAAAATTA
                                                                                                                                                                                                                                                                                                                   TGAAAGTCTGTGTACATTTCAACACTTTTCGGGAGATAGCAATTTTGTTTAATGAGTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATCTTATGCTGGAATGTTAGGAACCAAAGATCTCCTAAAATTTATCCAGC------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TAAGCAAAATGTTACTGAATTTCCTATCATAAAGATGTACAAGAAAGGCGAGAACCCAGT
                                                                                                                                                                                                                                                             ATTTTCTTTAAGAATAATATTTAATTTTCTATATTTTGTAAGATATTATCCTATGTAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         64151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note="assembly_name:Contig39"
38935 c 39288 g 59611 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        vector_side:right"
125107_ .136350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      clone_end:SP6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="assembly_name:Contig33"
88208. .99343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="assembly_name:Contig32"
77844 . .88107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="assembly_name:Contig30"
64966    .70722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="assembly_name:Contig38"
164004. .204606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="assembly_name:Contig37"
136451. .163903
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="assembly_name:Contig34"
99444. .112627
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="assembly_name:Contig31"
70823. .77743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="assembly_name:Contig36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     112728
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              note="assembly_name:Contig35"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             54.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .125006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 233.6; DB 2;
Pred. No. 1e-36;
0; Mismatches 354;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   ----TCAACAGGATTTCATATCCAGTGAATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                                                                                                     ----TA 1855
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              204606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   98;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                             1480
                                                                                                                                                                                                                                                                                                                                                                             . 1600
                                                                                                                 2145
                                                                                                                                             1360
                                                                                                                                                                                                     1420
                                                                                                                                                                                                                                 2025
                                                                                                                                                                                                                                                                                                                   1540
                                                                                                                                                                                                                                                                                                                                                 1915
                                                                                                                                                                                                                                                                                                                                                                                                                                                               1828
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1840
                                                                                                                                                                                                                                                                                                                                                                                                                                     1660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6
```

```
TITLE
JOURNAL
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 10
CNS01DV4/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                 COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCAGGACTAGAAAATCATATCACAATTTTACCTGCT 2528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTTCCTTCAGACCAGGCTATAATTGAAGAAAACCTTGTATTGTGGCTGAAGAAATTAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTGCCTCCCCTTCCTTCTTTTTTGGTGAATCTGCATTCAGGTGGCCAAGTATTTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTAGGACATCTTTTCATAAAGTGAACTTACTGGCATGATACTACTTAAAAGTTTAATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCAGGACTAGAAAATCATATCAGTAAGTTTTCTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTGCCTCCCCTTCCTTCTTGTTTTGGTGAATCTGCATTCAGGTGGCCAAGTATTTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTTCCTTCAGACCAGGCTATAATTGAAGAAAACCTTGTATTGTGGCTGAAGAAATTAGAA
   1
10
20
30
40
50
50
70
                                                                                                                           Range
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalla; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 212103)

Heilig,R., Petit,J.L., Vico,V., Dasilva,C., Robert,C., Wincker,P., Brottler,P., Cattolico,L., Barbe,V., Pelletier,E., Artiguenave,F., Levy,M., Eckenberg,R., Brulls,T., deBerardinis,Y., Cruaud,C., Gyapay,G., Saurin,W. and Welssenbach,J.

Sequencing of the human chromosome 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CNS01DV4 212103 bp DNA linear PRI 01-JUN-24
Human chromosome 14 DNA sequence BAC R-841020 of library RPCI-11
from chromosome 14 of Homo sapiens (Human), complete sequence.

    Web: www.genoscope.cns.fr)
    On Jan 12, 2001 this sequence version replaced gi:7009594
    ----- Genome Center

                                                                                                                                                         Overall
                                                                                                                                                                                                     Assembly program: Phrap; version Quality coverage: 8.52x in Q20 ba
                                                                                                                                                                                                                                    The following BAC sequence is oriented
                                                                                                                                                                                                                                                                                                              Center: Genoscope / Centre National de Center code: GS
                                                                                                                                                                                                                                                                                                                                                                                          Submitted (30-MAY-2001) Genoscope - Centre National de Sequencage BP 191 91006 EVRY cedex - FRANCE (E-mail : segrefégenoscope.cns.fi
                                                                                                                                                                                                                                                                                                                                                                                                                                        Genoscope.
                                                                                                                                                                                                                                                                                 Contact: SeqRef@genoscope.cns.fr
                                                                                                                                                                                                                                                                                                 Web site: http://www.genoscope.cns.fr/
                                                                                                                                                                                                                                                                                                                                                                                                                         Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HTG; HTGS_ACTIVEFIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AL133453.3 GI:12140277
                                                                                                                                                                                                                                                                                                                                                                                                                                                        (bases 1 to 212103)
    19
29
39
49
59
                                                                                                                                                         quality chart
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -CAATATTGACACTGGTAAAGCAGAAATACTTGGATTCATTTACTCCATGC
6
22
103
1721
4067
7406
18255
                                                                                                                                                                                                       Q20 bases;
                                                                                                                                                                                                                       2.0
                                                                                                                                                                                                        sum-of-contigs
                                                                                                                                                                                                                                                      from
                                                                                                                                                                                                                                                                                                                               Sequencage
                                                                                                                                                                                                                                                      the
                                                                                                                                                                                                                                                      т7
                                                                                                                                                                                                                                                      ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRI 01-JUN-2001
                                                                                                                                                                                                                                                      the
                                                                                                                                                                                                                                                      SP6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   940
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1060
```

```
VERSION
KEYWORDS
                                                                                                  RESULT 11
AC102579
                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                Q
                                                                                                                                                                       밁
                                                                                                                                                                                                Q
                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                      Db
                                                                                                                                                                                                                                                                                                                                                                                                   ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                    ACCESSION
                                                                   DEFINITION
                                                                                      Locus
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 4.48;
Best Local Similarity 99.5%;
                                                                                                                                                                       6604
                                                                                                                                                                                                                                     6664
                                                                                                                                                                                                                                                                                                   6724 CAACTGCAGCTGATAATGTTTTCCGGCTTCAATGTCTTTAGAGTTGGGATCTCTTTTGTC 6665
                                                                                                                                                                                                                                                                                                                                                                    6784 AGGTGTTGTCTTAGGAAACAGAACACAGCAGTGAAAAAACAGACAAAATCCGCTCAGATA 6725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      source
                                                                                                                                                                                                                                                                                                                                     360
                                                                                                                                                                                                                                                                                                                                                                                                     300 AAGTGTTGTCTTAGGAAACAGAACAGCAGCAGCAGTGAAAAACAGACAAAATCCGCTCAGATA 359
                                                                                                                                                                                      TATTTTAGTACATTGCAACCAGG 502
                                                                                                                                                                     TATTTTAGTACATTGCAACCAGG 6582
                                                                                                                                                                                                                                     ATAATGTGCATTTTTTACATGCCAACAGTAAACTCTTTACCAGAACTGAGTCCTCAGAAA 6605
                                                                                                                                                                                                                                                    ATAATGTGCATTTTTTACATGCCAACAGTAAACTCTTTACCAGAACTGAGTCCTCAGAAA 479
                                                                                                                                                                                                                                                                                                                                  CAACTGCAGCTGATAATGTTTTCCGGCTTCAATGTCTTTAGAGTTGGGATCTCTTTTGTC 419
                                                               AC102579 203610 bp DNA Mus musculus clone RP23-248E1, WORKING
   AC102579.2
HTG; HTGS_P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Percentage of bases with a quality value >=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Identified using the e-PCR software (G. Schuler) ^{\rm m} 65366 a 40917 c 40188 g 65632 t
2579.2 GI:22381563
HTGS_PHASE1; HTGS_I
                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Identified using the e-PCR software (G. Schuler)" 173803. .174008
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     dbSTS:STS57193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RHdb: RH8077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Identified using the e-PCR software (G. Schuler)"
190790. .191002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="matching EMBL:G38529
RHdb:RH100282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    dbSTS:STS58373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RHdb:RH8202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note="matching EMBL:G37390
RHdb:RH101245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     dbSTS:STS45436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RHdb: RH65505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      dbSTS:STS57848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RHdb:RH83663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Identified using the e-PCR software 105088. .105238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="matching EMBL:AA171755
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RHdb: RH34566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note-"matching EMBL:G07671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="matching EMBL:D78275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Identified using the e-PCR software
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /chromosome="14"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 one_lib="RPCI-11"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .99334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .51078
 HTGS_DRAFT; HTGS_FULLTOP
                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 201.4; DB 9; Pred. No. 3.3e-30;
                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                   DRAFT SEQUENCE,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 212103;
                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      40 : 99 %.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     <u>ଜ</u>.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ି
ଜ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Schuler)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Schuler)"
                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                    HTG
                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                    COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
                                                                                                                                                                                                                                                                                                   TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
                                                                                                                                                                                                                                                                                                                      Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mus musculus
                                                                                                                                                  Web site: http://www-seq.wi.mit.edu
                                                                                                                                                                   Center code: WIBR
```

Ferreira, P., Fitzhugh, W., Gage, D., Galagan, J., Gardyna, S., Ginde, S., Gord, S., Goyette, M., Graham, L., Grand-Pierre, N., Hagos, B., Heaford, A., Horton, L., Hulme, W., Iliev, I., Johnson, R., Jones, C., Kamat, A., Karatas, A., Kells, C., LaRocque, K., Lamazares, R., Landers, T., Lehoczky, J., Levine, R., Liu, G., MacCarthy, M., McEwan, P., McKernan, K., McPheeters, R., Meldrim, J., McCarthy, M., McEwan, P., McKernan, K., McPheeters, R., Meldrim, J., McDaus, L., Mihova, T., Mlenga, V., Murphy, T., Naylor, J., Nguyen, C., Norbu, C., Norman, C. H., O'Connor, T., O'Donnell, P., O'Neil, D., Oliver, J., Peterson, K., Phunkhang, P., Pierre, N., Pollara, V., Oliver, J., Rosetti, M., Roy, A., Santos, R., Schauer, S., Schupback, R., Seaman, J., Rosetti, M., Roy, A., Santos, R., Schauer, S., Schupback, R., Strauss, N., Subramanian, A., Talamas, J., Tesfaye, S., Theodore, J., Topham, K., Travers, M., Travis, M., Trigilio, J., Vassillev, H., Viel, R., Vo, A., Wilson, B., Wu, X., Wyman, D., Ye, W. J., Young, G., Direct Submission 2 (bases 1 to 203610)

Birren,B., Linton,L., Nusbaum,C., Lander,E., Ali,A., Allen Birren,S., Barna,N., Bastien,V., Boguslavkiy,L., Boukhga Brown,A., Camarata,J., Campopiano,A., Chang,J., Chazaro,B., Chapenel,Y., Colangelo,M., Collins,S., Collymore,A., Cook, P., Cohapenel,Y., Colangelo,M., Collins,S., Collymore,A., Cook, P., Cohapenel,Y., Colangelo,M., Collins, S., Collymore, A., Cook, P., Collymore, A., Coll Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus. 1 (bases 1 to 203610)
Birren,B., Nusbaum,C. and Lander,E.
Mus. musculus, clone RP23-248E1 Choepel,Y., Colangelo,M., Collins,S., Collymore,A., Coox,A.,
Cooke,P., DeArellano,K., Dewar,K., Diaz,J.S., Dodge,S., Faro,S., Boguslavkiy, L., Boukhgalter, B.,

AL Submitted (23-Nov-2001) Whitehead Institute/MIT Center for Genome Research, 320 Charles Street, Cambridge, MA 02141, USA (Dases 1 to 203610)

RES Birren, B., Nusbaum, C., Lander, E., Ali, A., Alien, N., Anderson, S., Barna, N., Bastien, V., Bloom, T., Boguslavkiy, L., Boukhgalter, B., Cooke, P., DeArellano, K., Dewar, K., Diaz, J.S., Dodge, S., Ferreira, P., FitzGerald, M., Gage, D., Galagan, J., Gardyna, S., Gord, S., Graham, L., Grand-Pierre, N., Hagos, B., Horton, L., Hulme, W., 1liev, I., Johnson, R., Jones, C., Kamat, A., Kells, C., Landers, T., Levine, R., Lindblad-Toh, K., Liu, G., MacClean, C., MacGonald, P., Major, J., Mathews, C., McCarthy, M., Meldrim, J., Meneus, L., Mihova, T., Methews, C., O'Connor, T., O'Donnell, P., O'Neil, D., Oliver, J., Peterson, K., Phunkhang, P., Pierre, N., Raymond, C., Retta, R., Rise, C., Rogov, P., Smith, C., Spencer, B., Stange-Thomann, N., Stojanovic, N., Talamas, J., Tesfaye, S., Thoodore, J., Topham, K., Travers, M., Vassillev, H., Viel, R., Vo, A., Wilson, B., Wu, X., Wyman, D., Young, G., Zainoun, J., Direort (Suhmission)

Submitted (21-AUG 2002) Whitehead Institute/MIT Center for Genome Research, 320 Charles Street, Cambridge, MA 02141, USA On Aug 21, 2002 this sequence version replaced gi:17061665. All repeats were identified using RepeatMasker: Smit, A.F.A. & Green, P. (1996-1997) http://ftp.genome.washington.edu/RM/RepeatMasker.html

------ Genome Center
Center: Whitehead Institute/ MIT Center for Genome Research

Contact: sequence_submissions@genome.wi.mit.edu

Center project name: L19034
Center clone name: 248_E_1
------ Summary Statistics
Sequencing vector: Plasmid; n/a; 100% of reads
Chemistry: Dye-terminator Big Dye; 100% of reads
Assembly program: Phrap; version 0.960731
Assembly program: Phrap; version 0.960731
Consensus quality: 194595 bases at least 040

Mouse BAC"

```
arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will be preserved.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NOTE: This is a 'working draft' sequence. It currently consists of 29 contigs. The true order of the pieces is not known and their order in this sequence record is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Consensus quality: 198128 bases at least Q30 Consensus quality: 199686 bases at least Q20 Insert size: 204000; agarose-fp Quality coverage: 6.3 in Q20 bases; agarose-fp Quality coverage: 6.4 in Q20 bases; sum-of-contigs
                      178519 178618: gap of 100 bp
178619 201081: contig of 22463 bp in length
201082 201181: gap of 100 bp
201182 203610: contig of 2429 bp in length.
                                                                                                                                                       151351 151450: gap of
151451 163581: cont.
163582 163681: gap of
                                                                                                                                                                                                                                 141333 141432: gap of 100 bp
141433 151350: contig of 9918 bp in length
                                                                                                                                                                                                                                                                                                                                                                     120970 121069: gap of
                                                                                                                                                                                                                                                                                                                                                                                                   106799 106898: gap of 106899 120969: conti
                                                                                                                                                                                                                                                                                              129693 129792: gap of 129793 141332: cont
                                                                                                                                                                                                                                                                                                                                                                                                                                          86042 86141: gap of 100 bp 86142 97779: contig of 11638 bp in length 97880 97879: gap of 100 bp 106798: contig of 8919 bp in length 106799 106798: contig of 8919 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3944; contig of 1452 bp in 3945 4044; gap of 100 bp 4045 5485; contig of 1441 5586 5585; gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            78032 78131:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          71336 71435:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   56585 56684:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 1366: contig of 1366 bp in length
1367 1466: gap of 100 bp
1467 2392: contig of 926 bp in length
2393 2492: gap of 100 bp
2493 3944: contig of 1452 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        100 bp
1486 5585; gap of 100 bp
586 6815; contig of 170 bp
116 6915; gap of 170 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              131 21130: gap of 100 bp in length 24393; contig of 3263 bp in length 394 24493; gap of 100 bp 444 27284; contig of 2791 bp in length 285 27344; gap of 100 bp 100 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  22 10721: gap of 100 bp in 16
13000: contig of 2279 bp in 16
13100: gap of 100 bp
101 13100: gap of 1918 bp in 16
15018: contig of 1918 bp in 16
15018: gap of 100 bp
19 17273: contig of 2155 bp in 16
174 17373: gap of 100 bp
174 17373: gap of 3657 bp in 16
  Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6915: gap of 100 bp
8703: contig of 1788 bp in
8803: gap of 100 bp
10621: contig of 1818 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 64048:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            63948: cc-
                                                                                                                              33681: gap of 100 bp
178518: contig of 14837 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100 bp in 100 bp in 15: gap of 100 bp in 1873: contin 100 bp in 173 contin 15
                                                                                                                                                                                                                                                                                                                                                     129692:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    100 bp
100 bp in length
63948; contig of 7264 bp in length
148; gap of 7287 bp in length
1335; contig of 7287 bp in length
135; gap of 100 bp
178031; contig of 656 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .31: gap of 100 bp
86041: contig of 7910 bp in length
                                                                                                                                                                                  ap of 100 bp
contig of 12131 bp in length
                                                                                                                                                                                                                                                                                        contig of 11540 bp in length
                                                                                                                                                                                                                                                                                                                                          ap of 100 bp contig of 8623 bp
                                                                                                                                                                                                                                                                                                                                                                                                   ap of 100 bp
contig of 14071 bp in length
                   dd r
                                                                                                                                                                                                                                                                                                                                               bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              length
                                                                                                                                 length
  ACCESSION
VERSION
                                                                                                                              RESULT 12
AC102579/c
                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                     맑
                                                                                                                                                                                                                                                                                                                                                                                                   QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                               DEFINITION
                                                                                                           Snoo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches 145;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Best
                                                                                                                                                                                                                                            135467
                                                                                                                                                                                                                                                                                              1751
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1691 TAAGCAAAATGTTACTGAATTTCCTATCATAAAGATGTACAAGAAAGGCGAGAACCCAGT 1750
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local Similarity
                                                                                                                                                                                                                                                                     ATCTTATGCTGGAATGTTAGGAACCAAAGATCTCCCTAAAATTTTATCCAGCT 1801
                                                                                                                                                                                                                                         GTCTTATGCTGGTATGTTGGCAACTAAAGATCTCCTGAAATTTATCCAGTT 135517
                                                                                                                                                                                                                                                                                                                                                  AGGCAGGTCCACCATCCTTCTCACCAGAATAAATTGTGCAGATTGGTCTGATATATGTAC 135406
pieces.
AC102579
AC102579.2
                                                                             AC102579 203610 bp DNA linear HTG 21-AUG-2002 Mus musculus clone RP23-248E1, WORKING DRAFT SEQUENCE, 29 unordered
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note="assembly_fragment"
86142. .97779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="assembly_fragment"
97880. .106798
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      56685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="assembly_fragment"
53172    .56584
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="assembly_fragment"
17374. .21030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="assembly_fragment"
78132. .86041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       64049
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="assembly_fragment"
27385. .53071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note="assembly_fragment"
21131. .24393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="assembly_fragment"
15119. .17273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="assembly_fragment"
10722. .13000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4045.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="assembly_fragment
clone_end:SP6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4045. .5485
/note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    vector_side:left"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="Mus musculus"
/db_xref="taxon:10090"
/clone="RP23-248E1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2493. .3944
/note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1467. .2392
/note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="assembly_fragment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             note-"assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /clone_lib="RPCI-23 Female
     GI:22381563
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .8703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .78031
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .63948
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .53071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 129.4; DB 2;
Pred. No. 1.1e-15;
0; Mismatches 26;
```

Indels

0;

Gaps

0

Length 203610;

FEATURES

HTG; HTGS_PHASE1; HTGS_DRAFT; HTGS_FULLTOP

```
JOURNAL REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Birren, B., Nusbaum, C., Lander, E., Ali, A., Allen, N., Anderson, S., Barna, N., Bastlen, V., Bloom, T., Boguslavkiy, L., Boukhgalter, B., Camarata, J., Chang, J., Chazaro, B., Choepel, Y., Collymore, A., Cook, A., Cooke, P., DeArellano, K., Dewar, K., Dlaz, J.S., Dodge, S., Faro, S., Ferreira, P., FitzGerald, M., Gage, D., Galagan, J., Gardyna, S., Gord, S., Graham, L., Grand-Pierre, N., Hagos, B., Horton, L., Hulme, W., Iliev, I., Johnson, R., Jones, C., Kamat, A., Karatas, A., Kells, C., Landers, T., Levine, R., Lindblad-Toh, K., Karatas, A., Kells, C., Macdonald, P., Major, J., Matthews, C., McCarthy, M., Meldrin, J., Meneus, L., Mihova, T., Mlenga, V., McCarthy, M., Meldrin, J., Meneus, L., Mihova, T., Mlenga, V., Murphy, T., Naylor, J., Nayen, C., Nicol, R., Norbu, C., Norman, C.H., O'Connor, T., O'Donnell, P., O'Neil, D., Oliver, J., Peterson, K., Phunkhang, P., Pierre, N., Raymond, C., Retta, R., Rise, C., Rogov, P., Roman, J., Roy, A., Schauer, S., Schupback, R., Seaman, S., Severy, P., Smith, C., Spencer, B., Stange-Thomann, N., Stojanovic, N., Talamas, J., Viel, R., Vo, A., Wilson, B., Wu, X., Wyman, D., Young, G., Zainoun, J., Viel, R., Vo, A., Wilson, B., Wu, X., Wyman, D., Young, G., Zainoun, J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Lamazares, R., Landers, T., Lehoczky, J., Levine, R., Liu, G., MacLean, C., Macdonald, P., Major, J., Marquis, N., Matthews, C., MacCarthy, M., McEwan, P., McKernan, K., McDheeters, R., Meldrim, J., Mcneus, L., Mihova, T., Mlenga, V., Murphy, T., Naylor, J., Nguyen, C., Morbu, C., Norman, C.H., O'Connor, T., O'Donnell, P., O'Neil, D., Oliver, J., Peterson, K., Phunkhang, P., Pierre, N., Pollara, V., Oliver, J., Petta, R., Rieback, M., Riley, R., Rise, C., Rogov, P., Raymond, C., Retta, R., Rieback, M., Riley, R., Rise, C., Rogov, P., Roman, J., Rosetti, M., Roy, A., Santos, R., Schauer, S., Schupback, R., Seaman, S., Severy, P., Spencer, B., Strange-Thomann, N., Stojanovic, N. Strauss, N., Subramanian, A., Talamas, J., Tesfaye, S., Theodore, J., Topham, K., Travers, M., Travis, N., Trigilio, J., Vassiliev, H., Vola, R., Wilson, B., Mulx, Wann, D., Ye, W.J., Young, G., Talamas, M., Talamas, M., Talamas, M., Ye, W.J., Young, G., Walson, B., Wilson, B., Wilson, B., Wilson, B., Walson, B., W
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Submitted (21-AUG-2002) Whitehead Institute/MIT Center for Genome Research, 320 Charles Street, Cambridge, MA 02141, USA On Aug 21, 2002 this sequence version replaced gi:17061665. All repeats were identified using RepeatMasker: Smit, A.F.A. & Green, P. (1996-1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Cooke, P., DeArellano, K., Dewar, K., Diaz, J.S., Dodge, S., Faro, S., Ferreira, P., FitzHugh, W., Gage, D., Galagan, J., Gardyna, S., Ginde, S., Goyette, M., Graham, L., Grand-Pierre, N., Hagos, B., Heaford, A., Horton, L., Hulme, W., Illev, I., Johnson, R., Jones, C., Kamat, A., Karatas, A., Kells, C., Laroque, K., Johnson, R., Kenge, C., Kamat, A., Karatas, A., Kells, C., Laroque, K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Zembek, L.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Research,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Submitted (23-NOV-2001) Whitehead Institute/MIT Center for Genome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Choepel,Y.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Birren, B., Linton, L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mus musculus, clone RP23-248E1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Birren,B., Nusbaum,C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 http://ftp.genome.washington.edu/RM/RepeatMasker.html
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Zainoun, J., Zembek, L., Zimmer, A. and Zody, M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Anderson, S., Barna, N., Bastien, V., Boguslavkiy, L.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           search, 320 Charles Street, Cambridge, MA 02141, (bases 1 to 203610)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (bases 1 to 203610)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (bases 1 to 203610)
                                                                       Center project name: 20
                                                                                                                                                                                                                                                                                                                                                                                                                                Contact: sequence_submissions@genome.wi.mit.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Center code: WIBR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Center: Whitehead Institute/ MIT Center for Genome Research
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              site:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eutheria; Rodentia; Sciurognathi: Morriago, Mo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Camarata, J., Campopiano, A., Chang, J., Chazaro, B., ., Colangelo, M., Collins, S., Collymore, A., Cook, A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Zimmer, A. and Zody, M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -- Genome Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       http://www-seq.wi.mit.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             , Nusbaum, C., Lander, E., Ali, A., Allen, N.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Rodentia; Sciurognathi; Muridae; Murinae; Mus
rminator Big Dye; 100% o
Phrap; version 0.960731
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      and Lander, E
                                                                                                                                                                                                                                                                                        248_E_?
                                                                                                                                                                                                                                                                                                                                                                              L19034
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Boukhgalter, B.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COOK, A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Stojanovic, N.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Schupback, R.,
```

```
arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       be preserved.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              consists of 29 contigs. The true order of the pieces is not known and their order in this sequence record is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NOTE: This is a 'working
                                                                                                                                                                97880
106799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Quality coverage: 6.3 in Q20 bases; Quality coverage: 6.4 in Q20 bases;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Consensus quality: 194595 bases at Consensus quality: 198128 bases at Consensus quality: 199686 bases at Insert size: 204000; agarose-fp
                                                                                                                             120970 121069:
121070 12969:
                                                                                                                                                   106899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Insert size: 200810; sum-of-contigs
                                                                   151351 151450
                                                                                         141333 141432:
                                                                                                                                                                                                  86042
86142
                                            163582 163681:
                                                                                                                  129693 129792:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    10622
10722
13001
                                                                                                                                                                                       97780 97879:
                                                                                                                                                                                                                                                                                   63949
                                                                                                                                                                                                                                                                                                                                                                                                                                              15019 15118:
                                                                                                                                                                                                                                                        1336 71435:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2393 2492: gap
2493 3944:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1367 1466:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5486 5585:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6 6915: gap of 100
8703: contia ~ 6
                                                                                                                                                                                                                                                                                                   2 56584: contig of 56684: gap of
                                                                                                                                                              106898
                                                                                                                                                                                  86141: gap of
97779: contig
97879: gap of
                                                                                                                                                                                                                                                                 56684: gap of 100 bp
63948: contig of 7264 k
64048: gap of 100 bp
71335: contig of 7287 k
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3944: contig of
4044: gap of 10
                                                                                                                                                                                                                                                                                                                                                              24493: gap of 100 bp
27284: contig of 2791 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    13100:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8803: gap of 100 bp
10621: contig of 1818 bp
                                                                                                                                                                                                                                   78131:
                                                                                                                                                                                                                                                                                                                                                    27384:
                                                                                                                                                                                                                                                                                                                                                                                                                        17373:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          10721:
                                                                                                                                                                                                                                                                                                                                                                                                  21130:
                                             163581: cc 3681
                                                                                                                                         120969: ~~
                                                                                                     21069: gap of 100 bp
129692: contig of 8623 bp in length
29792: gap of 100 bp
141332: contig of 11540 bp in length
                                                                                                                                                                                                                    8618: gap of 
201081: contig
                               3681: gap of 178518: contig
                                                                                                                                                                                                                                                                                                                                   53071: cont
                                                                                                                                                                                                                                                                                                                                                                                                                              100: gap of 100 bp
15018: contig of 1918 b
118: gap of 100 bp
17273: contig of 2155 k
                                                                                                                                                                                                                                               78031:
                                                                                                                                                                                                                                                                                                                                                                                      24393:
                                                                                                                                                                                                                                                                                                                                                                                                             21030:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              21: gap of
13000: contig of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5485:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2392:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1366: contig
                                                                                                                                                                                                                                                                                                                                                                                           100 bp
1030: contig of 3657 bp
: gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          485: contig of 1441 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gap
                                                                                                                                                                                                                                                        gap of
gap
                                                                                           gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           contig of 10
                                                                             ap of 100 bp
contig of 9918 br
                                                                                                                                            contig of 14071 k
                                                                                                                                                                                                                                           p of 100 bp contig of 6596 k
                                                                                                                                                                                                                                                                                                                            p of 100 bp
contig of 25687 bp in length
p of 100 bp
                                                       ap of 100 bp
contig of 12131 bp in
                                                                                                                                                                         contig of 8919
                                                                                                                                                                                                                     contig of
                                                                                                                                                                                                                                                                                                                                                                                    contig of
                                                                                                                           100 bp
g of 8623 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        draft' sequence. It c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            100 bp
of 1788 bp
                                100 bp
of 14837 bp in
                                                                                                                                                                                                 100 bp
of 11638 bp
         of 22463 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            of 1366 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               100 bp
of 1230 bp
                                                                                                                                                                                                                                                                                       100 bp
1064 bp j
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   100
                                                                                                                                                                                                                         100 bp
f 7910 b
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      100 bp
                                                                                                                                                                                                                                                                                                                                                                                      100 bp
f 3263 h
                                                                                                                                                                                       100 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                              100 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    100 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           100 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            00
                                                                                                                                                                                                                                                                                                                     3413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1452 bp
                     dq 001
 þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       bp in length
                                                                                                                                                                                                                                            фþ
                                                                                                                                                                                                                                                                                                                                                                                                            đđ
                                                                                                                                                                                                                                                                                                                                                                                                                                 gd
                                                                                                                                                                                                                                                                                                                                                                                                                                                       qd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              þþ
                                                                               bp in length
                                                                                                                                                                           bp in length
                                                                                                                                                                                                                        bp in length
                                                                                                                                                                                                                                                                    bp in length
                                                                                                                                                                                                                                                                                                                 bp in length
                                                                                                                                                                                                                                                                                                                                                                                     bp in length
                                                                                                                                                   bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         least
least
least
                                                                                                                                                                                                                                               in length
                                                                                                                                                                                                                                                                                                                                                               in length
                                                                                                                                                                                                                                                                                                                                                                                                            in length
                                                                                                                                                                                                                                                                                                                                                                                                                                   in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                           ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                in length
                                                                                                                                                                                                                                                                                           in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            agarose-fp
sum-of-contigs
                                                                                                                                                                                                  in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                        length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            length
                                length
                                                        length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      It currently
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q40
Q30
Q20
```

```
RESULT 13
HS503N11
                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                      Qy
                                              DEFINITION
                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                                     LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
                                                                                                                                                                                                                                                   75831
                                                                                                                                                                                                                                                                                                                                75891 TTGTCCTGGTTTATGCTCACAGCTCTGAGAGTATAGAACATGCACATCTCTACTTTTTTC 75832
                                                                                                                                                                                                           1024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      source
                                                                                                                                                                                                                                                                                                                                                     904 TIGCCCTTTTGGAAAGTATTGGCTCTGAGGATGTGGAATATGCACATCTCTACTTTTTTC 963
                                                                                                                                                                                                                                                 ATTGTAAACTGGTCTTGGACCTGACCGAGCATTGCAGAACAACACTAATGGAACAGCCAT
                                                                                                                                                                 TGACTACACTGAACATTCACCTGTTTATTAAGACAATGAAAGCACCTCTGTTG 1076
                                                                                                                                                                                                                                                                                       ATTGTAAACTAGTCTTGGACCTGACCCAGCAATGTAGAAGAACACCTAATGGAACAGCCAT 1023
                     HS503N11 94749 bp DNA linear PRI 23-NOV-1999 Human DNA sequence from clone 503N11 on chromosome 6p24.1-24.3. Contains an STS, GSSs, genomic amrker D6S470 and a ca repeat
      polymorphism, complete sequence
                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="assembly_fragment"
71436. .78031
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="assembly_fragment"
64049. .71335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        56685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="assembly_fragment"
21131 24393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="assembly_fragment"
10722. .13000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2493.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            clone_end:SP6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         27385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   vector_side:left"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      'note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            'note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           note="assembly_fragment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /clone_lib="RPCI-23 Female Mouse BAC"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /clone="RP23-248E1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /db_xref="taxon:10090"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 organism="Mus musculus"
                                                                                                                                                                                                                                                                                                                                                                                                                                   2.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .106798
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .6815
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        . 5485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .56584
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .53071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .21030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .63948
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .15018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .86041
                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 126.6; DB 2
Pred. No. 4.1e-15;
                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                         203610;
                                                                                                                                                                                                                                                                                                                                                                                                                0,
                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                   75772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
TITLE
JOURNAL
                                                               misc_teature
                                                                                                                                                                                    repeat_region
                                                                                                                                                                                                                                                                                                                                                                                         repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                 repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
                     repeat_region
                                                                                                                                              repeat_region
                                                                                                                                                                                                                          repeat_region
                                                                                                                                                                                                                                                                  repeat_region
                                                                                                                                                                                                                                                                                                        repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     requests: clonerequest@sanger.ac.uk

On May 13, 1999 this sequence version replaced gi:4581366.

During sequence assembly data is compared from overlapping clones.

Where differences are found these are annotated as variations together with a note of the overlapping clone name. Note that the variation annotation may not be found in the sequence submission corresponding to the overlapping clone, as we submit sequences with only a small overlap as described above.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 This sequence was generated from part of bacterial clone contigs human chromosome 6, constructed by the Sanger Centre Chromosome Mapping Group. Further information can be found at http://www.sanger.ac.uk/HGP/Chr6 503N11 is from the library RPC13 constructed at the Roswell Park Cancer Institute by the group of Pieter de Jong. For further details see http://bacpac.med.buffalo.edu/ VECTOR: pCYPAC2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 This sequence is the entire insert of clone 503N11. This sequence has been finished according to sequence map criteria as follows. An attempt is made to resolve all sequencing problems, such as compressions and repeats, but not necessarily within known annotated human repeat sequence elements (e.g. Alu). Where the sequence is ambiguous, there is an annotation using the 'unsure'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The following abbreviations are used to associate primary accession numbers given in the feature table with their source databases: Em:, EMBL; Sw:, SWISSPROT; Tr:, TREMBL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Submitted (12-MAY-1999) Sanger Centre, Hinxton, Cambridgesh: CB10 1SA, UK. E-mail enquiries: humquery@sanger.ac.uk Clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 94749)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AL031122
AL031122.3 GI:4826502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      teature key.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ca repeat polymorphism; D6S470
      complement(12911. .1333)
/note="match: GSS B40033"
/13142. .13191
                                                                                                                                                                                                                        6184. .8869

/note="LLMB5 repeat: matches 2923.

8825. .9176
                                                                                                                                                                                                                                                                /note="match: GSS AQ150392"
5820. .6049
/note="MIR repeat: matches 35. .262 of consensus"
6184. .8869
                                                                                                                                                                                                                                                                                                                                                                                                                               3192. 3709
/note="MLTIF repeat: matches 8.
3835. 3989
                                                                                                                                                                                  3835. .3989 .--- matches o. .308 of consensus /note="MIR repeat: matches 52. .216 of consensus" 3993. .4127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="MIR repeat: matches 15. .259 of consensus" 3192. .3709
                                                                                                                                           9170. .10657
/note="L1M4 repeat: matches
11832. .11914
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="MER5A repeat: matches 100. .188 of consensus" 2774. .2997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /db_xref="taxon:9606"
/chromosome="6"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /map="p24.1-24.3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /organism="Homo sapiens"
                                                                                                                           /note="MER91B repeat: matches
                                                                                                                                                                                                                                                                                                                                                                      /note="L1MA5A repeat: matches 6152. .6292 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /clone_lib="RPCI-3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /clone="RP3-503N11"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .94749
copies 2 mer gt 92% conserved"
                                                                                                                                                                 674.
                                                                                                                           1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                    .568 of
                                                                                                                                                                   .1832 of consensus"
                                                                                                                           .91 of consensus
                                                                                                                                                                                                                                               .5873 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Cambridgeshire,
                                                                                                                                                                                                                                                                                                                                                                                                                                                    consensus"
```

```
misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    misc_feature
                                                                                                                   repeat_region
                                                                                                                                                    repeat_region
                                                                                                                                                                                                                                                                                                       repeat_region
                                                                                                                                                                                                                                                                                                                                         repeat_region
                                                                                                                                                                                                                                                                                                                                                                          repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                            repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            repeat_region
                 repeat_region
                                                 repeat_region
                                                                                repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                           repeat_region
                                                                                                                     /note="12 cc--37460
               /note="AluJb repeat: matches 133.
38742. .39153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="19 copies 2 mer ca 100% conserved'
complement(17752. .18167)
/note="match: GSS' AQ065232"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="MIR repeat: matches 59.
complement(31515. .31877)
/note="match: GSS AQ100296"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    29629. .29699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    complement(20664. .20987
                                                                  /note="MER63B repeat: matches 8.
                                                                                                     'note="L2 repeat: matches 2089.
                                                                                                                                                                    note="Charlie5 repeat: matches 2289. .2574"
                                                                                                                                                                                                                         'note="16 copies of ca 100% conserved; differs
                                                                                                                                                                                                                                        /note="match:STS Z24589; genomic marker D6S470"
35348. .35379
                                                                                                                                                                                                                                                                                        note="L1MA10 repeat: matches 5994. .6316 of consensus"
                                                                                                                                                                                                                                                                                                                         'note="Charlie5 repeat: matches 901.
                                                                                                                                                                                                                                                                                                                                                          /note="Charlie5 repeat: matches 581.
                                                                                                                                                                                                                                                                                                                                                                                          note="Charlie5 repeat: matches 7. .291 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                             /note="L2 repeat: matches 1729.
33291. .33572
                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="L2 repeat: matches 2675.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note="match: GSS B33497"
20807. .20985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    note="LTR12 repeat: matches 14. .1440 of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                e="12 copies 2 mer tt 96% conserved"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       e="L1MD3 repeat: matches 7082.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 e="MIR repeat: matches 19.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   e-"AluY repeat: matches 1. .292 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   e-"MIR repeat: matches 65. .245 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   e="AluSq repeat:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   e="LTR30 repeat: matches 551.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -"LTR23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 =="MIR repeat: matches 57. .262 of consensus"
7. .24675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       e="LTR1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2. .20318
=="MLTIA1 repeat: matches 1. .337 of consensus"
D. .20418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           e-"L1MB3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  e="match: GSS AQ348225"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      - "50
                                                                                                                                                                                       .35782
                                                                                                                                                                                                                                                                                                                                            .35181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .26661
                                                                                                                                                                                                                                                                                                                                                                             .33745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .32846
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .26294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       #R12 repeat: matches 572.
repeat: matches 2310.
                                                                                                                                     copies 2 mer aa 96% conserved
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  copies 2 mer ta 85% conserved"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       copies 2 mer gt 90%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          copies 2 mer tc 74% conserved*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         repeat: matches 5851. .6181 of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   repeat: matches 304. .395 of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    matches 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           conserved'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .131 of consensus
                                                                                                                                                                                                                                                                                                                                                                                                                             .1860 of consensus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   228 of consensus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .312
                                                                  .335 of consensus"
                                                                                                   .2627 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                            .2750 of
.2705 of consensus
                                 .299 of consensus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .643 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .670 of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .7740 of consensus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    of
                                                                                                                                                                                                                                                                                                                         .2297 of consensus'
                                                                                                                                                                                                                                                                                                                                                          .743 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   consensus "
                                                                                                                                                                                                                                                                                                                                                                                                                                                              consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    consensus'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   consensus"
                                                                                                                                                                      of
                                                                                                                                                                      consensus"
               Ş
                                                                              VΩ
                                                                                                                   망
                                                                                                                                                 Qy
                                                                                                                                                                                       В
                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                      ρ
                                                  밁
```

```
2.7%;
Best Local Similarity 55.9%;
Matches 378; Conservative
                                   65454 TCTTTTAACTTTTTAAAATACAAAGTCCTTGAAATTGGTGTTTTATACTCCCAACA 65513
                                                                                                                                                                                                 65335 TAGTCACATTCAA-ACAGTAGAAAGAAGCAAATATAATTAATTAATAATATATTTAT
                                                                                                                                                                                                                                                                                  65275 GAACAGAACCATCCAATACAAGTATAATGCAAATCACTTATGTAATTTCAAAATTCTCCAG
                                                                                                                                                                                                                            2950 TAACTACATTAAACAAAGTAAAAGTGAGGCAGGGCAAAATAATTTTGATATTTACTTTTCAC
                                                                                                                                                                                                                                                                                                     3118 TTTCTTACTTCCGAGTAGCCATATTTCAAGTGTTC-ATTGCCACATGTGGCCTGTGACTA 3176
                                                                            misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           repeat_region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       repeat_region
                                                                                                                      TTAAGCTAGTATATCCAAAATATTTTATTTCAACATGTAATCTATAAAAATCTATGAAA 65453
                                                                                                                                                           CCA--GTAGTATACCCAAAATAGCGAAAT-----ATAGAAATTATTAATGAGATA 3057
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /work="MER2 repeat: matches 15. .342 of consensus" complement(52938. .53361)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             49830. .50123
/note="AluSc repeat: matches 16. .309 of consensus"
50124. .52184
/note="TIGGER1 repeat: matches 273. .2417 of consen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="17 ^^
4756=
                                                                                                                                                                                                                                                                                                                                                                                                                                          Complement(52938. .53361)
/note="match: GSS AQ185926"
54150. .54465
/note="LIMA7 repeat: matches 5963. .6288 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               52185. .52247
/note="MIR repeat: matches 198. .259
52873. .53187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="MIR repeat:
49549. .49829
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note-"MIR repeat: matches 47. .140 of consensus 45065. .45399
/note-"MIR repeat: matches 1. .258 of consensus" 45488. .45925
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            45926
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 40114. .40252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="AluSx repeat: matches 38.
39451. .39832
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="match: GSS AQ167854"
16563. .46893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="26 copies 2 mer aa 71%
46301. .46562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="MIR repeat: matches 55.
41558. .41862
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="TIGGER1 repeat: matches 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="LIPA7 repeat: matches 5706. .6143 of consensus"
15926. .45977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="AluSg repeat: matches 1.
14272. .44367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      note="MLT11 repeat: matches 245. .410 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             'note="L2 repeat: matches 1901. .2131 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    note="MER2 repeat: matches 1. .345 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     'note="L2 repeat: matches 2598.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             'note="L2 repeat: matches 1555.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  'note="AluSq repeat: matches 132.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       note="L1P repeat: matches 558. .961 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   note="AluY repeat: matches 1. .305 of consensus" 3659. .43959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .49548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .41498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .40575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  copies 2 mer tg 91% conserved*
                                                                                                                                                                                                                                                                                                                                                             Score 124; DB 9;
Pred. No. 1.4e-14;
0; Mismatches 260
                                                                                                                                                                                                                                                                                                                                                                 Mismatches 260;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  matches 33.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     conserved*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .198 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .140 of consensus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .228 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                  Length 94749;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .2727 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .305 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .1693 of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .302 of consensus'
                                                                                                                                                                                                                                                                                                                                                               Indels 38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .273 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .308 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .2417 of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    of consensus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             consensus"
                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                            3009
                                                                                                                                                                                                                                                                                                                         2949
                                                                                                                                                                                                                                                                                    65334
                                                                                                                                                                                                       65393
                                                                                                                                                                                                                                                                                                                                                               6;
```

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 14
AC094089/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      рь
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÔ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VΩ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                  COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cos
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           65921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     65741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   65681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   65634
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 65574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 65514 TATCTCATTTCAGACTAGCCACATGTCAGGAGTTCAATAGCCACATGTGGCTCATGGCTA 6557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    65801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCTGATTTATACAGAA 65936
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGGGGATATTTAGCAATTGTCGGGAGACATTTTTTGATGTCATGACTAGGGCAGTTATTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTTGACCACCTATTTGGTGAGTTTATACCAGTGATTCTCAACTGGGGCTCTTATGTTCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTCACCACCC-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTGTATTGGACAGTTCAGTACTAGACAAAAACTAGCATAATTAACTTAGTTCTAGCCATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAGCTCCCATAGTAAAGAATGATCCAGCCCAAAATGTCAGTGGTGCCAAGATTGAGGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTACAATCATCTAGAGGCCAAGGATGCTGCTAAGCATCCTACATCCTACAATGCAGAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CATTTAGTGAGTAGAGGCCATGGATCCTGCTAAATAACCTGCATTGGACAGCGC-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TAGGAGACATTGGGTGATGTCTAGACTATTTTTGGATGTCACAACTGGGGAAGAGGGGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCTGACAGTTATATTTGTTTTATTGGAGTCATGATATTAAAATCAGCGTTTGTCAACCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATTTCTATTTGGATTAAAATTAAACTCTAATCACAGTTAACTCCACAGTGCATTCATGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTTGTGTTAAAAGTAA
Consensus quality: 6526 bases at least Q40 consensus quality: 11341 bases at least Q20 consensus quality: 1249 bases at least Q20 estimated insert size: 124000; pulse field gel estimation Estimated insert size: 13599; sum-of-contigs estimation Quality coverage: 0.14 in Q20 bases; pulse field gel estimation Quality coverage: 1.28 in Q20 bases; sum-of-contigs estimated was record contains 10 individual sequencing reads that have not been assembled into contigs. Runs of N are used to separate the reads and the order in which they appear is completely
                                                                                                                                                                                                                                                                                                                                                                          Center: Joint Genome Institute Center Code: JGI
                                                                                                                                                                                                                                                                                                                                                                                                                                 Submitted (14-SEP-2001) Production Sequence Institute, 2800 Mitchell Drive,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 (bases 1 to 14499)
DOE Joint Genome Institute.
Sequencing of Human Chromosome 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      14499 bp
Homo sapiens chromosome 5 clone
SAMPITNC
                                                                                                                                                                                                                                                                     Center Project Name: 720677
Center clone name: CITB-H1_
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Homo sapiens
                                                                                                                                                                                                                               Summary Statistics
                                                                                                                                                                                                                                                                                                                 Project Information
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DOE Joint Genome Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AC094089.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -CCCACAACAAGAATTATCCTGCCCGAAATGGTAGTCGTGCCAAGGCTGAGTAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (bases 1 to 14499)
                                                                                                                                                                                                                                                                                                                                                     site: http://www.jgi.doe.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HTGS_PHASE0.
                                                                                                                                                                                                                                                                                                                                                                                                                -Genome Center
                                                                                                                                                                                                                                                                   name: CITB-H1_224218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 - AGTCTTCCCATGGTGACTTTTCAAATGCATGCAGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Craniata; Vertebrata; Catarrhini; Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTD-224218, LOW-PASS
                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequencing Facility, DOE Joint
ive, Walnut Creek, CA 94598, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HTG 14-SEP-2001
                                                                                        estimation.
                                                                                                           estimation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         65920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  65800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 65680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    65860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   65740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 65633
```

```
20
                                                                                                   ₽
                                                                                                                          Ş
                                                                                                                                                    Вþ
                                                                                                                                                                             δÕ
                                                                                                                                                                                                      рЬ
                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                              ρ
                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                 2
                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                   Qy
                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                            8827
                                                                                                                                                                                                                                                                                                                                                               8887
                        3324
                                                                                                                                                      8648
                                                                                                                                                                                                       8708
                                                                                                                                                                                                                                                         8767
                                                                                                                                                                                                                                                                                  3035
                                                                                                                                                                                                                                                                                                                                    2975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
 8468
                                                                                                                                                                                                                                                                                                                                                                                    2915 AATATAAGTCACATATTTTAATTTAAAATTTTCTAGTAACTACATTAAACAAAGTAAAAGT 2974
                                                                                                                                                                                                                                                                                                                                   GAGCAGGGCAAAATAATTTTGATATTACTTTTCACCCAGTAGTATACCCAAAATAGCGAA 3034
                                                                                                                                                                                                                                                                                                                                                              AATGTGAGCCACATACATAATTTAAAAATTTCTAGTAGCCACATTAAAAAAACCTAAAAAGG 8828
NNNNNNNNNNNNATTTGGTTTATTCGACTTC
                        GTCATGATATTAAAATCAGCGTTTGTCAACCTC
                                                                                                    AAAACTAGCATAATTAACTTAGTTCTAGCCATGATTTCTATTTGGATTAAAATTAAACTC 3263
                                                                                                                                                                   AAGTGTTC-ATTGCCACATGTGGCCTGTGACTACTGTATTGGACAGTTCAGTACTAGACA
                                                                                                                                                                                                       TTGAAATCCGGTGTGTATCTTACATTTACGGCTTATCTCAATTTGGACTTGACACATTGC
                                                                                                                                                                                                                                TCTAAATGCAGTACATATTTATACTTACTGCATTTCTTACTTCCGAGTAGCCATATTTC
                                                                                                                                                                                                                                                        ACATGTAATCAACATAAAATTATTAGTGAGATATTTTACAT-TTTTTTCATGCTAAATCT
                                                                                                                                                                                                                                                                     ATAT-----AGAAATTATTAATGAGATATTTTACATCCTTTTTTGTACCAAGTCT
                                                                                                                                                                                                                                                                                                           AAGCAAGTGAAATTAATTTTATAATATACTTTAACCCCAATATATCGAAATATTGTTTCA
                                                                         TAATCACAGTTAACTCCACAGTGCATTCATGCAGCTGACAGTTATATTTGTTTTATTGGA
                                                  AAGTGCTCAATAGCTATGTGTAGCTATTGACTATTTTGGACAGTGCAATTCTAGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   arbitrary. Low-pass sequence sampling is useful for identifying clones that may be gene-rich and allows overlap relationships among clones to be deduced. However, it should not be assumed that this clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       will be sequenced to completion. In the event that
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            be preserved
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           the record is updated, the accession number will
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        7046
8455
8555
9910
10010
11300
11400
                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1036
1136
2335
2435
2435
3917
4017
5296
5396
6946
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /organism="Homo sapiens"
/db_xref="taxon:9606"
/chromosome="5"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /clone="CTD-224218"
/clone_lib="CalTech
2662 c 2531 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .14499
                                                                                                                                                                                                                                                                                                                                                                                                                           2.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  12799: gap of
14499: contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        11399: gap of 12699: contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               10009:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gap of
contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   contig
                                                                                                                                                                                                                                                                                                                                                                                                              Score 115; DB 2;
Pred. No. 8.7e-13;
0; Mismatches 215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                of 1700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  of 1290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        unknown
of 1199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      of 1279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          of 1300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           of 1355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              of 1550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                of 1482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   of 1035
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              human
4034
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1409
 8436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BAC library
t 901 otl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      bp in length bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               bp in length bp in length bp in length bp in length bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  in length
                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 14499;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              others
                                                                                                                                                                                                                                                                                                                                                                                                               12;
                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                               3203
                                                                                                                                                                                                                                                         8709
                                                                                                                                                                                                                                                                                  3084
                                                                                                                                                                                                                                                                                                            8768
                                                                                                    8529
                                                                                                                                                       8589
                                                                                                                                                                                                       8649
                                                                                                                                                                                                                                 3144
```

ω,

```
γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
AUTHORS
TITLE
JOURNAL
REFERENCE
AUTHORS
                                                                                            밁
                                                                                                                                      Q
                                                                                                                                                                                  Дδ
                                                                                                                                                                                                                         Q
                                                                                                                                                                                                                                                                          망
                                                                                                                                                                                                                                                                                                                                                             Вþ
                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 15
AC012619/c
Search completed: March 22, 2003, 09:39:22 Job time: 16452 secs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
Matches 219; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          20986 AATGTGAGCCACATACATTATTAAAAATTTCTAGTAGCCACATTAAAAAACCTAAAAGG 20927
                                                                                                                                                                                                                                                                          20807
                                                                                                                                                                                    20747
                                                                                                                                                                                                                                                                                                                                                                  20866
                                                                                                                                                                                                                                                                                                                                                                                                                                                     20926 AAGCAAGTGAAATTAAATTTTATAATATACTTTAACCCAATATATCGAAATATTGTTTCA 20867
                                                                                            20687
                                                                                                                                      3204 AAAACTAGCATAATTAACTTAGTTCTAGCCATGATTTCTAT 3244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2975 GAGCAGGCAAAAATAATTTTGATATTACTTTTCACCCAGTAGTATACCCAAAAATAGCGAA 3034
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2915 AATATAAGTCACATATTTTATTTAAAATTTTCTAGTAACTACATTAAACAAAGTAAAAGT 2974
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                            TCAAGAACAAGAAGTTATATTTATCATGTATGATGAATAT 20647
                                                                                                                                                                                                                              AAGTGTTC-ATTGCCACATGTGGCCTGTGACTGTATTGGACAGTTCAGTACTAGACA 3203
                                                                                                                                                                                                                                                                          TTGAAATCCGGTGTGTATCTTACATTTACGGCTTATCTCAATTTGGACTTGACACATTGC 20748
                                                                                                                                                                                                                                                                                                 TCTAAATGCAGTACATATTTATACTTACTGCATTTCTTACTTCCGAGTAGCCATATTTC 3144
                                                                                                                                                                                                                                                                                                                                                                  ACATGTAATCAACATAAAATTATTAGTGAGATATTTTACAT-TTTTTTCATGCTAAATCT 20808
                                                                                                                                                                                                                                                                                                                                                                                      ATATAGA-----AATTATTAATGAGATATTTTACATCCTTTTTTGTACCAAGTCT 3084
                                                                                                                                                                                    AAGTGCTCAATAGCTATGTGTAGCTATTGACTACTATTTTGGACAGTGCAATTCTAGACC 2068
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Direct Submission
Submitted (31-0CT-1999) Production Sequencing Facility, DOE Joint
Genome Institute, 2800 Mitchell Drive, Walnut Creek, CA 94598, USA
3 (bases 1 to 89196)
DOE Joint Genome Institute and Stanford Human Genome Center.
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Submitted (31-AUG-2001) DOE Joint Genome Institute, 2800 Mitchell Drive, Walnut Creek, CA 94598, USA On Aug 31, 2001 this sequence version replaced gi:7711556. Draft Sequence Produced by DOE Joint Genome Institute
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens chromosome 5 clone CTD-2022K1, complete sequence. AC012619
AC012619.6 GI:15383776
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 www-shgc.stanford.edu
Quality: Phrap Quality >=40 99.7% of Sequence;
Estimated Total Number of Errors is 0.2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2 (bases 1 to 89196)
DOE Joint Genome Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 89196)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens.
Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Finishing Completed at Stanford Human Genome Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              www.jgi.doe.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DOE Joint Genome Institute and Stanford Human Genome Center.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Homo sapiens"
/db_xref="taxon:9606"
/ctonemesome="5"
/clone="CTD-2022K1"
30551 a 17310 c 16123 g 25212 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1. .89196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2.5%; Score 111; DB 9; Length 89; 64.2%; Pred. No. 5.7e-12; tive 0; Mismatches 110; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      89196 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 89196;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         linear PRI 31-AUG-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ω
```

ر

```
Title:
Perfect score:
Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Run on:
       000
                                                                                                                                                   C
                                                                                                                                                                                                                                                      0 000,00 000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       G
       Pred. No.
score grea
and is der
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score
     d. No. is the number of results predicted by chance to have a
re greater than or equal to the score of the result being printed,
is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       seq length: 0 seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-847-046-1
4526
1 gccgagtcggtagr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Issued_Patents_NA:*

1: /cgn2_6/ptodata/1/ina/5A_COMB.seq:*
2: /cgn2_6/ptodata/1/ina/5B_COMB.seq:*
3: /cgn2_6/ptodata/1/ina/6A_COMB.seq:*
4: /cgn2_6/ptodata/1/ina/6B_COMB.seq:*
5: /cgn2_6/ptodata/1/ina/PCTUS_COMB.seq:*
6: /cgn2_6/ptodata/1/ina/backfiles1.seq:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query
Match Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   441362 seqs, 153338381 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            March 22, 2003, 04:56:26; Search time 157 Seconds
  2.2 6792

2.0 17327

1.7 65042

1.6 584

1.5 87350

1.5 87543

1.4 246240

1.4 246240

1.4 246240

1.4 2621

1.4 2621

1.4 955

1.4 55827

1.4 4129

1.4 7218

1.4 7218

1.3 16998

1.3 16998

1.3 16998

1.3 246240

1.3 246240

1.3 246240

1.3 246240

1.3 246240

1.3 246240

1.3 246240

1.3 246240

1.3 246240

1.3 246240

1.3 246240

1.3 246240

1.3 246240

1.3 246240

1.3 246240

1.3 246240

1.3 246240

1.3 246240

1.3 246240

1.3 246240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GenCore version 5.1.3 Copyright (c) 1993 - 2003 Compugen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DΒ
       US-09-374-454-20
US-07-906-817-15
US-09-784-316-31
US-09-270-391-24
US-08-781-891-79
US-08-724-394A-21
US-08-724-394A-21
US-08-724-394A-21
US-09-641-638-23
US-09-641-638-23
US-09-641-638-23
US-09-641-638-23
US-09-641-638-23
US-09-641-638-24
US-09-813-133A-3
US-08-232-463-14
US-08-232-463-14
US-08-232-463-14
US-09-078-294-3
US-09-183-155-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (without alignments)
8840.886 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     882724
  sequence
seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Description
                       20, Appli 3, Appli 27, App
                            Вb
                         5095 CTGGACAGCACAGTTCTAG 5113
```

		:						
Qy	Оу	Db 04	Оy	Qy Db	Qy Db	X W O	GRE COG C CCCC CCCCC CCCCCCCCCCCCCCCCCCCCC	
3182	3123 5035	3064 4975	3004 4915	2949 4855	2889 4797	luery M lest Lo latches	28 53 29 53 30 52 31 5 31 5 32 49 33 49 34 48 47 36 47 37 47 38 47 48 41 45 42 45 44 44 44 44 45 47 48 44 47 48 49 48 49 4	
TTGGACAG	TACTTCCGAG	ATCCTTTT	TTTCACCC.	GTAACT	AGACTAG	Match Local Simi es 208;	28 53.6 1.2 29 53.6 1.2 29 53.6 1.2 30 52.6 1.2 31 52 1.1 33 49.2 1.1 33 49.2 1.1 33 49.2 1.1 33 49.2 1.1 33 49.2 1.1 33 49.2 1.1 34 48.4 1.1 36 47.2 1.0 47.2 1.0 49.4 45.4 1.0 41.4 45.4 1.0 42 45.4 1.0 44.8 1.0 44.8 1.0 44.8 1.0 44.8 1.0 44.8 1.0 44.8 1.0 45.4 1.0 46.2 1.0 47.2 1.0 48.4 1.0 49.374-454-20 20.39548 GENERAL INFORMATION: APPLICANT: Hee, Mu- APPLICANT: HEE, CE, Mu- APPLICANT: HEE, CO CURRENT APPLICATION CURRENT APPLICATION CURRENT FILING DATE CURREN	
AGTTCAGTACT	CGAGTAGCC; GTACTAGCC;	g	გ – გ	TACATTAAAC,	GTGCCATCC	larity Conser	53.6 1.2 176373 3 53.4 1.2 50000 4 52.6 1.2 1750 4 48.4 1.1 19124 2 48.2 1.1 1865 3 47.2 1.0 84495 4 46.2 1.0 8495 4 47.2 1.0 8495 4 46.2 1.0 19124 2 46.2 1.0 19124 2 46.2 1.0 1924 2 46.3 1.0 19124 2 46.4 1.0 19124 2 46.8 1.0 1924 2 46.9 1.0 1566 4 47.2 1.0 1566 4 48.8 1.0 1622 1 44.2 1.0 1566 4 48.8 1.0 1622 1 49.6 10 1566 4 48.8 1.0 1622 1 49.6 10 1566 4 48.8 1.0 1622 1 49.6 10 1566 4 49.6 10 1566 4 49.7 10 1566 4 49.8 10 1622 1 40.9 10 1622 1 40.9 10 1622 1 40.9 10 1622 1 40.9 10 1622 1 40.9 10 1622 1 40.9 10 1622 1 40.0 10 165 2 40.0 10 1622 1 40.0 10 165 2 40.0 1	
TACTAG	CCATATTTCAAGT	FTGTACCAAGTC! STAATACTAGTC!	TAGTATACCCAAAATAG ATATCATTTGAACATGT	\$=\$	CCAATAG CCAATAG	2. 65. vative	2 176373 3 2 50000 4 2 1750 4 1 13865 3 1 162450 4 1 19124 2 1 8133 4 0 665 2 0 19124 2 0 4766 5 0 4766 5 0 19124 2 0 19126 4 0 1566	
32	rac Lac	2 – 2	GAA HA	PAA — PAA	GAAT 	, v %	3 U 4 U 3 U 4 U 4 U 2 U 4 U 4 U 2 U 4 U 2 U 4 U 2 U 4 U 2 U 3 U 4 U 4 U 4 U 6 U 7 U 8 U 9 U 9 U 9 U 9 U 9 U 9 U 9 U 9	
00	GTTCA-TTGCCAC	TTCTAAATGCAGTACATATTTTATACTT!	AATAGCGAAATATAGAAATTATTAATGAGATATTTTAC 	ngtaaaagtgagcagggcaaaataatty 	TATAATATAAGTCACATATTT TATAATCTGAGCCACATGTAT	Score 97.8; DB 4; Lengti Pred. No. 7.5e-15; 0; Mismatches 102; Inde	US-09-128-155-17 US-09-146-053-3 US-09-146-053-3 US-09-209-217-11 US-09-009-217-11 US-09-009-217-11 US-09-009-217-11 US-09-487-826B-13 US-09-659-791A-10 US-08-883-795A-36 US-08-487-826B-13 US-08-487-826B-13 US-08-487-926B-13 US-08-883-795A-14 US-09-659-791A-10 US-08-883-795A-16 US-	
	ATGTGGCCTGTGACTGTA 3181 ATGTGGCTAGTGGCTACTGCA 5094;	TACTGCATTTCT 3122 GATAGCACATCT 5034	'GAGATATTTTAC 3063 GTGATATTTTAC 4974	TTTGATATTACT 3003	TATTTAAAATTTTCTA 2948 AATTTTATTTTCTT 4854	rth 6792; lels 9; Gaps 4	Sequence 17, Appli Sequence 3, Appli Sequence 3, Appli Sequence 11, Appli Sequence 11, Appli Sequence 11, Appli Sequence 11, Appli Sequence 10, Appli Sequence 3, Appli Sequence 6, Appli Sequence 10, Appli Sequence 10, Appli Sequence 5, Appli Sequence 7, Appli Sequence 7, Appli Sequence 7, Appli Sequence 5, Appli Sequence 7, Appli Sequence 8, Appli Sequence 9, Appli Sequ	
						٠.		

```
RESULT 2
US-07-906-871-15/c
                                            LOCATION:
US-07-906-871-15
               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 15, Application US/07906871 Patent No. 5340739
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION:
APPLICANT: Stevens,
APPLICANT: Avraham,
                                                                                                                                                                                                                                                                                                                                                         TELEFAX: (202)833-8716 INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                       FEATURE:
                                                                                                                                                                                 FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE/DOCKET NUMBER: 06
TELECOMMUNICATION INFORMATION:
TELEPHONE: (202)833-7533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FILING DATE: 13-JUL-1988 ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: 1
FILING DATE: 13-JUL-
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER: US/07/635,544 FILING DATE: 18-JAN-1991 PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NUMBER OF SEQUENCES: 1
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE OF INVENTION:
TITLE OF INVENTION:
                                                                                                                                    FEATURE:
                                                                                                                                                                                                                           FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STREET: 122
                                                                                                                                                                                                                                                                                    MOLECULE TYPE:
                                                                                                                                                 LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: US/07/816,289 FILING DATE: 03 JAN 1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FILING DATE: 1 CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                    LOCATION:
                                                                                                                    NAME/KEY:
                                                                                                                                                                 NAME/KEY:
                                                                                                                                                                                              LOCATION:
                                                                                                                                                                                                           NAME/KEY:
                                                                                                                                                                                                                                        LOCATION:
                                                                                                                                                                                                                                                        NAME/KEY:
                                                                                                                                                                                                                                                                                                               STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COUNTRY:
                                                                          NAME/KEY:
                                                                                                                                                                                                                                                                                                                                           LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADDRESSEE:
                                                                                                                                                                                                                                                                                                                     NUCLEIC ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      20036
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Cimbala, Michele A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           E: Sterne, Kessler, Goldstein & Fox 1225 Connecticut Avenue, N.W., Suite
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  USA
                                                                                                                                                                                           intron
754..9596
                                                                                                                                                                                                                                        exon
621..753
                                                           16397..17327
                                                                          exon
                                                                                                                                                 exon
9597..9744
                                                                                                    9745..16396
                                                                                                                    intron
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sterne, Kessler,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     UMBER: PCT/US89/03051
13-JUL-1989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     19920103
                                                                                                                                                                                                                                                                                                               both
2.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        THEREOF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HEMATOPOIETIC CELL SPECIFIC TRANSCRIPTIONAL REGULATORY ELEMENTS OF SERGLYCIN AND USES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Richard L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Release #1.0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US/07/224,035
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 us/07/906,871
                                                                                                                                                                                                                                                                                                                                                                                                                                              33,851
                                                                                                                                                                                                                                                                                                                                                                         15:
Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                   0627.2830004
91.4; DB 1;
No. 5.3e-13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             300
             Length 17327;
```

```
QΥ
                                                           В
                                                                                            Ş
                                                                                                                                   В
                                                                                                                                                                       Qγ
                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                             ; NAME/KEY: misc_feature; LCCATION: (1)...(65042); OTHER INFORMATION: n = A,T,CUS-09-784-316-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 3
US-09-784-316-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   dd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NUMBER OF SEQ ID NOS:
SOFTWARE: FastSEQ for
SEQ ID NO 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 3, Application US/09784316 Patent No. 6461843
                                                                                                                                                                                                                                                                                                                                                                      Matches 188;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: DNA
ORGANISM: Human
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FILE REFERENCE: CL001139
CURRENT APPLICATION NUMBER: US/09/784,316
CURRENT FILING DATE: 2001-02-16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: WEI, Ming-Hui et al.
TITLE OF INVENTION: ISOLATED HUMAN ENZYME PROTEINS, NUCLEIC
TITLE OF INVENTION: ACID MOLECULES ENCODING HUMAN ENZYME PROTEINS, AND USES
TITLE OF INVENTION: THEREOF
                                                                                                                                                                                                                                                                                         22230 TCCAATAGAAATATAATGTCAGTCATACACATAATTTAAAAATTTCTACTAGCCACATTA 22289
                                                                                                                                     22348
                     3134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LENGTH: 65042
                                                                                                                                                                                                                                      2961 AACAAAGTAAAAGTGAGCAGGGCAAAATAATTTTGATATTTACTTTTCACCCAGTAGTATA 3020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5904
                                                                                                                                                                                                                                                                                                             2901 TCCAATAGAATTATAATATAAGTCACATATTTTATTTAAAAATTTTCTAGTAACTACATTA 2960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5664 GCTACCGTACTGGACAGAGCAGGCCTAGGCA 5634
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3114 TGCATTTCTTACTTCCGAGTAGCCATATTTCAAGTGTTCA-TTGCCACATGTGGCCTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3054 GATATITTACATCCTTTTTTGTACCAAGTCTTCTAAATGCAGTACATATTTTATACTTAC 3113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5964 TTGTACTGTCTAGACCAACTTTGTCCAATAGAAACACAAAGCAAACCACATAGGGAGTTT 5905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2878 TTCAAGTTTGCAGACTAGTGCCATCCAATAGAATTATAATAATAAGTCACATATTTTATTT 2937
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5844 TAACCTAACATATTCAAATATTGTCCTTTAACATATCATCAATGTAAAAAGTTATTACTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2938 AAAATTTTCTAGTAACTACATTAAACAAAGTAAAAGTGAGCAGGGCAAAATAATTTTGAT 2997
AGCCATATTTCAAGTGTT-CATTGCCACATGTGGCCTGTGACTGTATTGGACAGTTC
                                                           GTTCTGCATCCTCAAAATGCCAAATGCATTCTATACTTACATCACATCTCGATCCAAACT
                                                                                          CCCAAAATAGCGAAATATAGAAATTATTAATGAGATATT-----TTACATCCTTTTTT 3073
                                                                                                                                                                                                                A - - AAAGTAAAAACAGGTAAAATTAATTTTACTAAAATATTTTATGTAACCAAAAAATATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACTACTGTATTGGACAGTTCAGTACTAGACA 3203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAAGACATTATCATTTCAACATGTAATCAATACAAAAATAATGAGATTTTGGCATTTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GATATTTTGCATTCTTTCTTCATACTAAGGGTTCCAAATCTTGTATATTTTGCATTCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A----TTACTTTTCACCCAGTAGTATACCCCAAAATAGCGAAATATAGAAATTATTAATGA 3053
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGCCTGTCCCAATTTGCCTTGGCCACATTTCAAGTGTTCAGTAGCCACAAGTGACTTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              195;
                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                     1.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                or.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                     Score 74.8; DB 4;
Pred. No. 1.9e-08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  G
                                                                                                                                                                                                                                                                                                                                                                      Mismatches 122;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              131;
                                                                                                                                                                                                                                                                                                                                                                                                       Length 65042;
                                                                                                                                                                                                                                                                                                                                                                    Indels 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              <u>ن</u>
                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                     3192
                                                                                                3133
                                                                                                                                     22407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5725
                                                                                                                                                                                                                                                                                                                                                                    Ψ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              <u>ب</u>
```

```
QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                              Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       οy
                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                          DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-09-270-391-24
                                                                                                                                                                                                                                   US-08-781-891-79
                                                                                                                                                                                            Sequence 79, Patent No. 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOFTWARE: PatentIn Ver. SEQ ID NO 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches 169;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE OF INVENTION: Isolation and Identification of Control Sequences and TITLE OF INVENTION: Genes Modulated by Transcription Factors FILE REFERENCE: PS-00101.P.1 CURRENT APPLICATION NUMBER: US/09/270,391A CURRENT FILING DATE: 1999-03-16 NUMBER OF SEQ ID NOS: 25
                                                                                                                                                                             GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Mercola, Dan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: de Belle,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Adamson, Eileen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  OTHER INFORMATION: "n" refers to unknown nucleotide at positions OTHER INFORMATION: 403, 427, 492, 506, 557, 582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME/KEY: unsure LOCATION: (328).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         22528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               22468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3029
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LENGTH: 584
                                                                                                                                                                                                                                                                                                                                         3149
                                                                                                                                                                                                                                                                                                                                                                                                               3089
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2917 TATAAGTCACATATTTTATTTAAAATTTTCTAGTAACTACATTAAACAAAGTAAAAGTGA 2976
                               TITLE OF INVENTION:
TITLE OF INVENTION:
NUMBER OF SEQUENCES:
                    CORRESPONDENCE ADDRESS
                                                                                                       APPLICANT:
                                                                                                                          APPLICANT:
                                                                                          APPLICANT:
                                                                                                                                            APPLICANT:
                                                                                                                                                           APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                  156
                                                                                                                                                                                                                                                                                                         276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         36
                                                                                                                                                                                                                                                                                                                                       GTTC-ATTGCCACATGTGGCCTGTGACTACTGTATTGGACAGTTCAGTACTA 3199
                                                                                                                                                                                                                                                                                                                                                                                                           AATGCAGTACATATTTATACTTACTGCATTTCTTACTTCCGAGTAGCCATATTTCAAGT 3148
                                                                                                                                                                                                                                                                                                                                                                                                                                            TCAATTATAACCAAATTAAAATTAAGGAGATATTTTACAATTTTCATATTAACGTTTCCA 215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACTGTTGAAATAAATTTTAATATCTTTCATTGAACCCAATATATGCAAAATACTATCATT 155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCAGGGCAAAATAATTTTGATATTACTTTTCACCCA-----GTAGTATACCCAAAAT 3028
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TACAAGCTGCATATGTAATTTAAAATTTTCTAATAACCACATTTAAAAAAGGTAAAAAGAA 95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGCTGTAGAATGTGACTTGC 22547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGCCACACATCAAGTGTTAAATAACCACATGTAGATAAAAGCCACTGTATCAGATAGTGC 22527
                                                                                                                                                                                                                                                                                                    GCTCAACAGCTACGTGAGGATAGTGGCTATTATGTCACAAAATGCAGCTCTA 327
                                                                                                                                                                                                                                                                                                                                                                            ATTCTGGTGTGAATTTTACACTCACCGAACATCTCAATTCTGACAAGTCATATTTTAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGCGAAATATAGAAATTATTAATGAGATATTTTACATCCTTTTTTGTACCAAGTCTTCTA 3088
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGTACTAGACAAAAACTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                24, Application US/09270391A
5. 6410233
                                                                                                                                                                                                60906
                                                                                                                                                                                                               Application
                                                                  Mulligan, John T.
Schellenberg, Gerald D.
VENTION: GENE AND GENE PRODUCTS RELATED
                                                                                                                                      Yu, Chang-En
                                                                                                                        Oshima, Junko
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ON: "n"
 SEED and BERRY LLP
                                                                                                                                                             Ying-Hui
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1.6%;
                                   WERNER'S SYNDROME
                                                                                                                                                                                                               us/08781891
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 71.6; DB 4;
Pred. No. 9.6e-09;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               114;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 584;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                            275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best
OTHER INFORMATION: unknown
```

```
RESULT 6
US-09-791-211-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-08-781-891-79
                                                                                                                                                                                                                                                                                                                                    Sequence 3, Application US/09791211 Patent No. 6448080
                                                                                                                                                                SEQ ID NO 3
                                                                                                                                                                                                                                                                                                                  GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches 148;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                        APPLICANT: Donna T. Ward
APPLICANT: Andrew T. Watt
TITLE OF INVENTION: ANTISENSE MODULATION OF
FILE REFERENCE: RTS-0205
                                                                                                                                                                                                     CURRENT APPLICATION NUMBER: US/09/791,211
CURRENT FILING DATE: 2001-02-23
                                                                                                                                                                                 NUMBER OF SEQ ID NOS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELEFAX: (206) 682-6031 INFORMATION FOR SEQ ID NO: 79:
                                                                                                                                                                                                                                                                                                                                                                                                                                                   45829 CAGTAGAAATACAATGTGAGCTACATATGCAATTTTTAAATTTTCTAGTAGCCACATTTTA 45888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   45889 AAAAGTAAATGGATGCAATTTATTTTGATAATATAATTTAATTTAGTCTACTATATTTAAA 45948
                                 OTHER INFORMATION:
                                                                  FEATURE:
NAME/KEY: unsure
                                                                                                                                TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         45949 ATTTTATCATTTCAACATGTAATCAATATGAAAATTATTAATGAGATATTTTACATACTT 46008
                                                                                                           ORGANISM: Homo sapiens
NAME/KEY: unsure
LOCATION: 7427
                                                    LOCATION: 742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3010 CCAGTAGTATACCCAAAATAGCGAAATATAGAAATTATTAATGAGATATTTTACATCCTT 3069
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2963 CAAAGTAAAAGTGAGCAGGGC------AAAATAATTTTTGATATTACTTTTCAC 3009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2903 CAATAGAATTATAATATAAGTCACATATTTTATTTAAAATTTTCTAGTAACTACATTAAA 2962
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE/DOCKET NUMBER: 24
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOFTWARE: PatentIn Release #1.0, CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CLASSIFICATION: 800.
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            y match 1.5%;
Local Similarity 62.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER: FILING DATE: 27-DEC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STREET:
                                                                                                                                                87543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        98104-7092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Seattle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       No. 6090620tenburg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    87350 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6300 Columbia Center,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (206) 622-4900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 27-DEC-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 single
                                   unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US/08/781,891
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ωurg Ph.D., Carol
39,317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 69.2; DB 3;
Pred. No. 5.8e-07;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        240052.419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                701 Fifth Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Version #1.30
                                                                                                                                                                                                                                                             WRN EXPRESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 87350;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
```

2;

NAME/KEY: unsure LOCATION: 29422 OTHER INFORMATION: unknown NAME/KEY: unsure LOCATION: 29979

OTHER INFORMATION: unknown NAME/KEY: unsure LOCATION: 29980

OTHER INFORMATION: unknown

NAME/KEY: unsure LOCATION: 29981

NAME/KEY: unsure LOCATION: 29370 OTHER INFORMATION: unknown

NAME/KEY: unsure LOCATION: 12742 OTHER INFORMATION: unknown

NAME/KEY: unsure LOCATION: 12605 OTHER INFORMATION: unknown

NAME/KEY: unsure LOCATION: 11609 OTHER INFORMATION: unknown

```
Ş
                                                                                                                 밁
                                                  Вb
                                                                             δÃ
                                                                                                                                              δÃ
                                                                                                                                                                                                                                                ; OTHER INFORMATION:
; OTHER INFORMATION:
US-09-791-211-3
                                                                                                                                                                                Query Match 1.5%;
Best Local Similarity 62.7%;
Matches 148; Conservative
                                                                                                                                                                                                                                                                                                                                              NAME/KEY: unsure
LOCATION: 79134
OTHER INFORMATION: unknown
NAME/KEY: unsure
LOCATION: 79198
                                                                                                                 46022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME/KEY: unsure LOCATION: 68660 OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NAME/KEY: unsure
LOCATION: 66614
OTHER INFORMATION: unknown
                                                  46082 AAAAGTAAATGGATGCAATTTATTTTGATAATATAATTTAATTTAGTCTACTATATTTAAA 46141
                                                                                                                                                                                                                                                                                            NAME/KEY: unsure LOCATION: 86336
                                                                                                                                                                                                                                                                                                                                OTHER INFORMATION: unknown
                                                                                                                                                                                                                                                                                                                                                                                                                               OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME/KEY: unsure
LOCATION: 68739
OTHER INFORMATION: unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME/KEY: unsure LOCATION: 68733
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME/KEY: unsure
LOCATION: 68718
OTHER INFORMATION: unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME/KEY: unsure
LOCATION: 68697
OTHER INFORMATION: unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME/KEY: unsure
LOCATION: 63290
OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME/KEY: unsure
LOCATION: 59242
OTHER INFORMATION: unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        OTHER INFORMATION: unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OTHER INFORMATION: unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME/KEY: unsure LOCATION: 59215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME/KEY: unsure
LOCATION: 54684
OTHER INFORMATION: unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OTHER INFORMATION: unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME/KEY: unsure LOCATION: 53384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME/KEY: unsure
LOCATION: 52787
OTHER INFORMATION: unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME/KEY: unsure LOCATION: 52786 OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LOCATION: 47291
OTHER INFORMATION: unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME/KEY: unsure LOCATION: 69785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME/KEY: unsure LOCATION: 59235
3010 CCAGTAGTATACCCCAAAATAGCGAAATATAGAAATTATTAATGAGATATTTTACATCCTT
                                                                                                               CAAAGTAAAAGTGAGCAGGGC-----
                                                                                                                                                                                                                                                                                unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                 unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        unknown
                                                                                                                                                                                Score 69.2; DB 4;
Pred. No. 5.8e-07;
0; Mismatches 73;
                                                                            - AAAATAATTTTGATATTACTTTTCAC
                                                                                                                                                                                                              Length 87543;
                                                                                                                                                                                  Indels
                                                                                                                                                                                  15;
```

NAME/KEY: unsure LOCATION: 46808 OTHER INFORMATION: unknown

OTHER INFORMATION: unknown

Gaps

2

3069

3009

NAME/KEY: unsure LOCATION: 42459

OTHER INFORMATION: unknown

NAME/KEY: unsure LOCATION: 46823

OTHER INFORMATION: LOCATION:

unknown

NAME/KEY:

OTHER INFORMATION: NAME/KEY: unsure LOCATION: 46826

unknown

NAME/KEY: unsure LOCATION: 39020 OTHER INFORMATION: unknown

OTHER INFORMATION: unknown

NAME/KEY: unsure LOCATION: 36816

NAME/KEY: unsure LOCATION: 42164

OTHER INFORMATION: unknown NAME/KEY: unsure LOCATION: 34072 OTHER INFORMATION: unknown

NAME/KEY: unsure LOCATION: 33095

OTHER INFORMATION: NAME/KEY: unsure LOCATION: 31592

unknown

OTHER INFORMATION: unknown

NAME/KEY: unsure LOCATION: 33160

NAME/KEY: unsure LOCATION: 34066

OTHER INFORMATION: unknown

NAME/KEY: unsure LOCATION: 31206 OTHER INFORMATION: unknown

NAME/KEY: unsure LOCATION: 31205 OTHER INFORMATION: unknown

NAME/KEY: unsure LOCATION: 30140 OTHER INFORMATION: unknown

OTHER INFORMATION: unknown

OTHER INFORMATION: unknown

NAME/KEY: unsure LOCATION: 30136

멍

46142

ATTTTATCATTTCAACATGTAATCAATATGAAAATTATTAATGAGATATTTTACATACTT 46201

```
Ъ
                               δÃ
                                                                                                  QΥ
                                                                                                                                  Db 154963 CACATATGTAAATTTTTAAAATTTTTTAATAGGCACATTTTA-----AAAAGTGAAAAAAGA 154910
                                                                                                                                                                 QΥ
                                                                                                                                                                                                                                                                      ; LOCATION: 1..24624; OTHER INFORMATION: US-08-724-394A-20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         οy
                                                                 Db 154909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-08-724-394A-20/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Patent No.
                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                    Query Match
154849 ATTAAAATATTGAGTTTTTACTTTGTTATTTTACTAGTTCTTTGAAATCTGGTGTGTATT 154790
                                                                                                                                                                                                                                                                                                                                                                                                                                                         TELEFAX: 415-576-0300 INFORMATION FOR SEQ ID NO: 20:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GENERAL INFORMATION:
                                                                                                    2984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                   2924 CACATATTTTATATAAAATTTTCTAGTAACTACATTAAACAAAGTAAAAGTGAGCAGGGC 2983
                             3044 TTATTAATGAGATATTTTACATCCTTTTTTGTACCAAGTCTTCTAAATGCAGTACATATT 3103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELEPHONE: 415-576-0200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATTORNEY/AGENT INFORMATION:
NAME: Fitts, Renee A.
REGISTRATION NUMBER: 35,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/O
FILING DATE: 01-OCT-1996
                                                                                                                                                                                                                                                                                                                                                        MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Tsuchihashi, Zenta
APPLICANT: Wolff, Roger K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Αυτ
STREET:
STREET:
San
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
                                                                                                                                                                                                                                                                                                    NAME/KEY: misc_feature LOCATION: 1..246240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CLASSIFICATION:
                                                                                                                                                                                                     Local Similarity les 157; Conserv
                                                                                                                                                                                                                                                                                                                                                                          TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                        STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                      LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ADDRESSEE:
                                                                                                AAAATAATTTTGATATTACTTTTCACCCAGTAGTATACCCCAAAATAGCGAAATATAGAAA 3043
                                                                 AATCTATTTTAATGATTTGAATCCAGTGTAACCAAAAATTGTTTCAACAAGGTATCTAAT 154850
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           20,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             94111-3834
                                                                                                                                                                                                                                                                                                                                                                                                        nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                      246240 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Application US/08724394A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Two Embarcadero Center, 8th Floor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           415-576-0300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Thomas, Winston
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ruddy, David A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Kronmal,
                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Feder, John N.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Francisco
                                                                                                                                                                                                                                                                                                                                                                          not relevant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TOWNSEND and TOWNSEND and CREW LLP
                                                                                                                                                                                                                                                                                                                                                          CDNA
                                                                                                                                                                                                                                                                                                                                                                                          not relevant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Megabase Transcript Map: No. 58 Sequences and Antibodies Thereto 31
                                                                                                                                                                                                                 1.4%; 57.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gregory
                                                                                                                                                                                                                                                                                      /note= "HLA-H.CONTIG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US/08/724,394A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       35, 136
                                                                                                                                                                                                 Score 65.2; DB 2;
Pred. No. 1.1e-05;
0; Mismatches 108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            017957-000100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ø
                                                                                                                                                                                                   108;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     No. 5872237el
                                                                                                                                                                                                                                   Length 246240;
                                                                                                                                                                                                   Indels
                                                                                                                                                                                                   7;
                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                   2
```

```
QΥ
                                                                     B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
Db 154909 AATCTATTTTAATGATTTGAATCCAGTGTAACCAAAAATTGTTTCAACAAGGTATCTAAT 154850
                                                                                                                                                                                                            US-08-724-394A-21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-08-724-394A-21/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 8
                                                                                                                                 Query Match
Best Local Similarity
Matches 157; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Patent No.
                                                                   154963 CACATATGTAAATTTTTAATATAGGCACATTTTA-
                                                                                                                                                                                                                                                                                                                                                                                     TELEFAX: 415-576-0300 INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  154729 ATGGTTAGTGGCAACTATCTTGGACAGGACAG 154698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       154789
                                2984 AAAATAATTTTGATATTACTTTTCACCCAGTAGTATACCCAAAATAGCGAAATATAGAAA 3043
                                                                                                                                                                                                                                                                                                                                                                                                                                        NAME: Fitts, Renee A.
REGISTRATION NUMBER: 35,136
REFERENCE/DOCKET NUMBER: 01
TELECOMMUNICATION INFORMATION:
TELEPHONE: 415-576-0200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3104 TTATACTTACTGCATTTCTTACTTCCGAGTAGCCATATTTCAAGTG-TTCATTGCCACAT
                                                                                                    2924 CACATATTTTATTTAAAATTTTCTAGTAACTACATTAAACAAAGTAAAAGTGAGCAGGGC 2983
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: US/O
FILING DATE: 01-OCT-1996
CLASSIFICATION: 536
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                  FEATURE:
                                                                                                                                                                                                                                                                                                    MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CORRESPONDENCE ADDRESS:
ADDRESSEE: TOWNSEND and CREW LLP
STREET: Two Embarcadero Center, 8th Floor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE OF INVENTION: Megabase Transcript Map: TITLE OF INVENTION: Sequences and Antibodies NUMBER OF SEQUENCES: 31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0
                                                                                                                                                                                                                                             LOCATION:
                                                                                                                                                                                                                               OTHER INFORMATION:
                                                                                                                                                                                                                                                                NAME/KEY:
                                                                                                                                                                                                                                                                                                                        TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                 STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                      CENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTACACTTANAGCACATCACAGTTTGGAGTAGCCACATTTCCAATGCTTAATACTCACAT 154730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTGGCCTGTGACTACTGTATTGGACAGTTCAG 3194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        94111-3834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1, Application US/08724394A
5872237
                                                                                                                                                                                                                                                                                                                                                      nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           San Francisco
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CA
                                                                                                                                                                                                                                                                                                                                                                    246240 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ruddy, David A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Lauer, Peter M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Kronmal, Gregory
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Wolff, Roger K
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Thomas, Winston
                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                     not relevant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Tsuchihashi,
                                                                                                                                                                                                                                               1..246240
                                                                                                                                                                                                                                                                 misc_feature
                                                                                                                                                                                                                                                                                                    CDNA
                                                                                                                                                                                                                                                                                                                                     not relevant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          John N
                                                                                                                                                         1.48; 57.78;
                                                                                                                                                                                                                               /note= "HLA-H.CONTIG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Release #1.0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US/08/724,394A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Zenta
                                                                                                                                                                                                                                                                                                                                                                                                         21:
                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              017957-000100
                                                                                                                                                       Score 65.2; DB 2;
Pred. No. 1.1e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          လ
                                                                                                                                         Mismatches 108;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Thereto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NO.
                                                                                                                                                                      Length 246240;
                                                                                                                                         Indels
                                                                   AAAAGTGAAAAAAGA 154910
                                                                                                                                       7;
                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3162
                                                                                                                                         2;
```

```
Ş
                                                                  Qy
                                                                                                                                                                           US-08-724-394A-22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                   Db 154963 CACATATGTAAATTTTAAATTTTTAATAGGCACATTTTA-----AAAAGTGAAAAAAGA 154910
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-08-724-394A-22/c
                                                                                                   Query Match
Best Local Similarity
Matches 157; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 22, Application US/08724394A Patent No. 5872237 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                        TELEFAX: 415-576-0300
INFORMATION FOR SEQ ID NO: 22:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            154729 ATGGTTAGTGGCAACTATCTTGGACAGGACAG 154698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   154849
                                                     2924 CACATATTTTATTTAAAATTTTCTAGTAACTACATTAAACAAAGTAAAAGTGAGCAGGGC 2983
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CORRESPONDENCE ADDRESS:
ADDRESSEE: TOWNSEND and TOWNSEND and CREW
STREET: Two Embarcadero Center, 8th Floor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2984 AAAATAATTTTGATATTACTTTTCACCCCAGTAGTATACCCCAAAATAGCGAAATATAGAAA 3043
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3044
                                                                                                                                                                                                                                               FEATURE:
                                                                                                                                                                                                                                                         TOPOLOGY: no
                                                                                                                                                                                                                                                                                                                                                                                               REGISTRATION NUMBER: 35,136
REFERENCE/COCKET NUMBER: 01
TELECOMMUNICATION INFORMATION:
TELEPHONE: 415-576-0200
                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATTORNEY/AGENT INFORMATION:
NAME: Fitts, Renee A.
REGISTRATION NUMBER: 35,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOFTWARE: PatentIn Release #1.0, CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT:
                                                                                                                                                                                         NAME/KEY: misc_feature LOCATION: 1..246240 OTHER INFORMATION: /no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: US/0 FILING DATE: 01-OCT-1996 CLASSIFICATION: 536
                                                                                                                                                                                                                                                                                               STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COUNTRY: USA
ZIP: 94111-3834
                                                                                                                                                                                                                                                                                                                               LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTGGCCTGTGACTACTGTATTGGACAGTTCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTACACTTAAAAGCACATCACAGTTTGGAGTAGCCACATTTCCAATGCTTAATACTCACAT 154730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTATACTTACTGCATTTCTTACTTCCGAGTAGCCATATTTCAAGTG-TTCATTGCCACAT 3162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATTAAAATATTGAGTTTTACTTTGTTATTTTACTAGTTCTTTGAAATCTGGTGTGTATT 154790
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTATTAATGAGATATTTACATCCTTTTTTGTACCAAGTCTTCTAAATGCAGTACATATT 3103
                                                                                                                                                                                                                                                                                                               nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              San Francisco
                                                                                                                                                                                                                                                                                                                             246240 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Thomas, Winston
Tsuchihashi, Zenta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Kronmal, Gregory S.
Lauer, Peter M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ruddy, David A.
                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Feder,
                                                                                                                                                                                                                                                                             not relevant
                                                                                                                                                                                                                                                                                                not relevant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      John N.
                                                                                                                   1.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Megabase Transcript Map:
                                                                                                                                                                                         /note= "HLA-H.CONTIG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US/08/724,394A
                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                    017957-000100
                                                                                                   Score 65.2; DB 2;
Pred. No. 1.1e-05;
0; Mismatches 108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Antibodies
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3194
                                                                                                     108;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LLP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Thereto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                No. 5872237el
                                                                                                                                     Length 246240;
                                                                                                     Indels
                                                                                                   7;
                                                                                                     Gaps
                                                                                                     2
```

Ä

```
망
                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             B
                                                                                                                      2
                                                                                                                                                                   멍
                                                                                                                                                                                                                                                                                              Qy
                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; NAME/KEY: misc_feature
; OTHER INFORMATION: Incyte ID No. 6426186 331395.1CB1
US-09-484-970B-44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-484-970B-44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Db 154729 ATGGTTAGTGGCAACTATCTTGGACAGGACAG 154698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Db 154909 AATCTATTTTAATGATTTGAATCCAGTGTAACCAAAAATTGTTTCAACAAGGTATCTAAT 154850
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
Matches 207; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NUMBER OF SEQ ID NOS:
SOFTWARE: PERL Progre
SEQ ID NO 44
LENGTH: 2821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 44, Application US/09484970B Patent No. 6426186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: Jones, Karen A.
APPLICANT: Volkmuth, Wayne
APPLICANT: Walker, Michael G.
TITLE OF INVENTION: BONE REMO
FILE REFERENCE: PB-0014 US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CURRENT APPLICATION NUMBER: US/09/484,970B
CURRENT FILING DATE: 2000-01-18
NUMBER OF SEQ ID NOS: 172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     154849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM: Homo sapiens
  1406
                                                                                                                                                                                                            3077
                                                                                                                                                                                                                                                        1235
                                         3197
                                                                                                                                                                       1293
                                                                                                                                                                                                                                                                                                3017
                                                                                                                                                                                                                                                                                                                                          1175
                                                                                                                                                                                                                                                                                                                                                                                    2973
                                                                                                                                                                                                                                                                                                                                                                                                                              1115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3163 GTGGCCTGTGACTACTGTATTGGACAGTTCAG 3194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1055 TTCTTACTAACACAGATTAGGGTATAGGCATCTAGAGATGCACTGTCCACTGTAAATACT 1114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2853 TCCTTAAAGAATAATATTAAATCATTTCAAGTTTGCAGACTAGTGCCATCCAATAGAATT 2912
                                                                                                     CATATTTCAAGTGTTCATTGCCACATGTGGCCTGTGACTACTGTATTGGACAGTTCAGTA 3196
                                                                                                                                                                                                                                                                            TATACCCAAAATAGGGAAATATAGAAATTATAATGAGATATTTTACATCCTTTTTTGTA 3076
                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATAATATAAGTCACATATTTTATATAAAATTTTCTAGTAACTACATTAAACAAAGTAAAA 2972
CTATACTCATTCCTTCAAA 1424
                                       CTAGACAAAAACTAGCATA 3215
                                                                                                                                                                     TTAGGCCTTTGAAATTCAGTGTGTATTAAACA----CATCTCAATTCAAACCATCAC
                                                                                                                                                                                                          CCAAGTCTTCTAAATGCAGTACATATTTTATACTTACTGCATTTCTTACTTCCGAGTAGC 3136
                                                                                                                                                                                                                                                        CATTTCAACATAGGATCAATATAAAAATTATTAATGAGTTATTTTACTT--TTTTTCATA
                                                                                                                                                                                                                                                                                                                                          AAAGAACCCAGGTATTGATTTAAATATTTATTTTAACCCCAATAGGCTCAAAAACACTAT 1234
                                                                                                                                                                                                                                                                                                                                                                                                                              ATAATGAGAGCCACATCTGTAATTTAAATGTTTCTAGTAACCACATTTTTTTAAAAGTAA 1174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTACACTTAAAGCACATCACAGTTTGGAGTAGCCACATTTCCAATGCTTAATACTCACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATTAAAATATTGAGTTTTTACTTTGTTATTTTACTAGTTCTTTGAAATCTGGTGTGTATT
                                                                               CATATTTCAAGTCTTTGTAGCCAAATGTGACTAGTGGCTACCATATTAGACAGTGCAGAT 1405
                                                                                                                                                                                                                                                                                                                                                                                  GTGAGCAGGGCAAAATAATTTTGATATTACTTTTCACC------CAGTAG 3016
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTATACTTACTGCATTTCTTACTTCCGAGTAGCCATATTTCAAGTG-TTCATTGCCACAT 3162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTATTAATGAGATATTTTACATCCTTTTTTGTACCAAGTCTTCTAAATGCAGTACATATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PERL Program
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BONE REMODELING GENES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  54.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 63.8; DB 4;
Pred. No. 2.2e-06;
0; Mismatches 147;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 4; Length 2821;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              25;
                                                                                                                                                                                                                                                           1292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      154730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     154790
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ω
••
```

```
RESULT 12
US-09-641-638-24/c
                                                                                                                                                                                         밁
                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                           ₽
                                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-641-638-23
                                         GENERAL INFORMATION:
                                                                 Sequence 24, Application US/09641638 Patent No. 6432648
                                                          Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 1.4%;
Best Local Similarity 64.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQ ID NO 23
LENGTH: 955
                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TYPE: DNA
ORGANISM: Homo Sapiens
FEATURE:
NAME/KEY: allele
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRIOR FILING DATE: 1999-03-23
PRIOR PPLICATION NUMBER: US (
PRIOR FILING DATE: 1999-02-12
PRIOR FILING DATE: 1999-02-12
NUMBER OF SEQ ID NOS: 1304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CURRENT APPLICATION NUMBER: US/09/641,638
CURRENT FILING DATE: 2000-08-16
PRIOR APPLICATION NUMBER: US 09/502,330
PRIOR FILING DATE: 2000-02-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE OF INVENTION: BIALLELIC MARKERS DERIVED FROM GENOMIC REGIONS CARRYING TITLE OF INVENTION: GENES INVOLVED IN ARACHIDONIC ACID METABOLISM FILE REFERENCE: GENSET.051CP1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR FILING DATE: 1999-PRIOR APPLICATION NUMBER:
                     APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOFTWARE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRIOR APPLICATION NUMBER: US 60/133,200 PRIOR FILING DATE: 1999-05-07
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME/KEY: misc_binding LOCATION: 466..490 OTHER INFORMATION: 12-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LOCATION: 478
OTHER INFORMATION: 12-628-306 : polymorphic base
NAME/KEY misc_binding
LOCATION: 479..497
OTHER INFORMATION: 12-628-306.misl, complement
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               OTHER INFORMATION: upstream amplification primer, complement NAME/KEY: primer_bind LOCATION: 266. 286 OTHER INFORMATION: downstream amplification primer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME/KEY: misc_binding LOCATION: 458..477
OTHER INFORMATION: 12-628-306.mis2, potential
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME/KEY: primer_bind
LOCATION: 764,..782
                                                                                                                                                                                                                                                                                                                                                                              3043 ATTATTAATGAGATATTTTACATCC----TTTTTTGTACCAAGTCTTCTAAATGCAGTAC 3098
                                                                                                                                                                                                                                                                                                3099 ATATTTTATACTTACTGCATTTCCTTACTTCCGAGTAGCCATATTTCAAGTGTTCATTGCC
                                                                                                                                                                                                                                                                                                                                                               899
                                                                                                                                                                                         779 CACACTGACTACGAACTACTGCATTGGGTAGTACAGCTACAGAGCAAAAAT 729
                                                                                                                                                                                                               ACATGTGGCCTGTGACTACTGTATTGGACAGTTCAGTACTAGACAAAAACT 3209
                                                                                                                                                                                                                                                                        GCAATTTACATTTACAGCACGTCTCAGTTCAGAGGAGCTACACTTCAAGGGCTCAGGAGC
                                                                                                                                                                                                                                                                                                                                                         ATTATTAATGAGATGTTTTGCATTCCTTTTCTTTGTATTAACTCCTTCAAACTCCGGTGT 840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                              111; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    23, Application US/09641638
5. 6432648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Patent.pm
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Chumakov, Ilya
Cohen, Annick
Blumenfeld, Marta
Bougueleret, Lydi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bougueleret,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Blumenfeld, Marta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    12-628-306 potential probe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Lydie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US 60/119,917
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                us 09/275,267
                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 63.4; DB 4;
Pred. No. 1.5e-06;
                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      q.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 955;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0r
                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                              4.
                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                 3158
```

```
GENERAL INFORMATION:
APPLICANT: GAN, Weiniu et al
TITLE OF INVENTION: ISOLATED HUMAN PROTEASE PRO
TITLE OF INVENTION: NUCLEIC ACID MOLECULES EN
TITLE OF INVENTION: USES THEREOF
FILE REFERENCE: CL001173
CURRENT APPLICATION NUMBER: US/09/813,133A
CURRENT FILING DATE: 2001-06-06
NUMBER OF SEQ ID NOS: 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-641-638-24
                                                                                                                                                                                                                                                        US-09-813-133A-3/c
                                                                                                                                                                                                           Sequence 3, Application US/09813133A Patent No. 6455294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches 111;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQ ID NO 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRIOR APPLICATION NUMBER: US PRIOR FILING DATE: 1999-02-12 NUMBER OF SEQ ID NOS: 1304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRIOR APPLICATION NUMBER: US 60/133,200
PRIOR FILING DATE: 1999-05-07
PRIOR APPLICATION NUMBER: US 09/275,267
PRIOR FILING DATE: 1999-03-23
PRIOR FILING DATE: 1999-03-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FILE REFERENCE: GENSET.0510
CURRENT APPLICATION NUMBER:
CURRENT FILING DATE: 2000-0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRIOR APPLICATION NUMBER: US PRIOR FILING DATE: 2000-02-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE OF INVENTION: BIALLELIC MARKERS DERIVED FROM GENOMIC REGIONS CARRYING TITLE OF INVENTION: GENES INVOLVED IN ARACHIDONIC ACID METABOLISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOFTWARE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME/KEY: primer_bind
LOCATION: 769..787
COTHER INFORMATION: upstream amplification primer,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURE:
NAME/KEY: allele
LOCATION: 478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LOCATION: 271..291
OTHER INFORMATION: downstream
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME/KEY: misc_binding LOCATION: 458..477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            OTHER INFORMATION: 12-628-311 potential probe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LOCATION: 466..490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME/KEY: misc_binding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NAME/KEY: primer_bind LOCATION: 271..291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              OTHER INFORMATION: 12-628-311.mis2, potential complement
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NAME/KEY: misc_binding LOCATION: 479..498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OTHER INFORMATION: 12-628-311.mis1, potential
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OTHER INFORMATION: 12-628-311 : polymorphic base T or C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM: Homo Sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3043 ATTATTAATGAGATATTTTACATCC----TTTTTTGTACCAAGTCTTCTAAATGCAGTAC 3098
                                                                                                                                                                                                                                                                                                                                                      784 CACACTGACTACGAACTACTGCATTGGGTAGTACAGCTACAGAGCAAAAAT 734
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     904 ATTATTAATGAGATGTTTTGCATTCCTTTTTCTTTGTATTAACTCTTCAAACTCCGGTGT 845
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local Similarity
                                                                                                                                                                                                                                                                                                                                                                              ACATGTGGCCTGTGACTACTGTATTGGACAGTTCAGTACTAGACAAAAACT 3209
                                                                                                                                                                                                                                                                                                                                                                                                                                           GCAATTTACATTTACAGCACGTCTCAGTTCAGAGGAGCTACACTTCAAGGGCTCAGGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATATTTTATACTTACTGCATTTCTTACTTCCGAGTAGCCATATTTCAAGTGTTTCATTGCC 3158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           955
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Patent.pm
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Cohen, Annick
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GENSET.051CP1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2000-08-16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        us 60/119,917
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              us 09/502,330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US/09/641,638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 63.4; DB 4;
Pred. No. 1.5e-06;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              amplification primer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                   ENCODING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               56;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                complement
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                      HUMAN PROTEASE PROTEINS,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                        AND
```

SOFTWARE: FastSEQ for Windows Version 4.0

US-08-370-319C-12

```
Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; TYPE: DNA
; ORGANISM: Human
US-09-813-133A-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-08-370-319C-12/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Patent No. 5856091
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local
                                                                                                                                     TELEFAX: (212) 838-3884 INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              46475 AATATAAAAATTATTCTTGAAAATATTTTATGTTACTTTTTCATACCTAAGCCTTCAAATT 46416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          46355 GGATAGCCACATGTGGTTAGTGGCTACTATGCTGGACAGT 46316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICAN:
TITLE OF INVENTION: TUMOR REJECTION
TITLE OF INVENTION: REJECTION
TITLE OF INVENTION: REJECTION
TO SPONTENCES: 12
                                                                                                                                                                                                                                                                                                                            CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION UMBER: 08/272,351
FILING DATE: 8-ULY-1994
PRIOR APPLICATION DATA:
                                                                                                                                                                                                         REFERENCE/DOCKET NUMBER: LUTELECOMMUNICATION INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOFTWARE: Wordperfect CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3092 GCAGTACATATTTTATACTTACTGCATTTCTTACTTCCGAGTAGCCATATTTCAAG-TGT 3150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3034 AATATAGAAATTATTAATGAGATATTTTACAT--CCTTTTTTGTACCAAGTCTTCTAAAT 3091
                                                    FEATURE:
                                                                                                                                                                                                                                                             ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NUMBER OF SEQUENCES: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
OTHER INFORMATION:
OTHER INFORMATION:
                                                                                  LENGTH: 4129 base pairs TYPE: nucleic acid STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: US/08/370,319C FILING DATE: 10-JANUARY-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER: IBM PS/2
OPERATING SYSTEM:
                                                                                                                                                                                         TELEPHONE:
                                                                                                                                                                                                                                           REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                               FILING DATE:
                                                                    TOPOLOGY:
                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTGGTGTGTATTTAACACTCAGTGTATGTCTCAATTCAGACAAGCTACATTTTAAGCACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCATTGCCACATGTGGCCTGTGACTACTGTATTGGACAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                al Similarity
112; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       55827
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             10022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            New York City
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Application US/08370319C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3: Felfe & Lynch
805 Third Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Brichard, Vincent; Van Pel, Aline;,
Traversari, Catia; W 1fel, Thomas; Coulie, Pierre;
Boon-Falleur, Thierry; De Plaen, Ettenne
VENTION: ISOLATED NUCLEIC ACID SEQUENCE CODING FOR A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                  linear
                                                                                                                                                                                           (212) 688-9200
                                                                                                                                                                                                                                                                                                 18-MAR-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Diskette,
                                                                                                                                                                                                                                                             No. 5856091man D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TUMOR REJECTION ANTIGEN PERCURSOR PROCESSED TO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PC-DOS
                 The sequence is preceded by unsequenced portion of from
unsequenced portion kilobases
                                                                                                                                                                                                                                                                                                                 08/032,978
                                                                                                                                                                                                                                           30,946
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5.25
                                                                                                                                                                                                                             LUD 5377.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 62;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           inch,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ANTIGEN PRESENTED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .1e-05
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  45;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 55827;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BY HLA-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                 ç
                 5.3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ψ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             46356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AT LEAST ONE
```

```
ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          뮹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Вp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-09-224-834-12/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 12,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches 200; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: BOON-Falleur, Thierry; De Plaen, Etlenne
TITLE OF INVENTION: ISOLATED NUCLEIC ACID SEQUENCE CODING
TITLE OF INVENTION: TUMOR REJECTION ANTIGEN PERCURSOR PRO
TITLE OF INVENTION: REJECTION ANTIGEN PRESENTED BY HLA-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2729
                  ATTORNEY/AGENT INFORMATION:
NAME: Hanson, No. 6201111man D.
REGISTRATION NUMBER: 30,946
                                                                                                                                                                                                                                                  SOFTWARE: Wordperfect CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2926 CATATTTTATTTAAAATTTTCTAGTAACTACATTAAACAAAGTA-----AAAGTGAGC 2978
                                                                                                                PRIOR APPLICATION DATA:
                                                                                                                                                                          PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                  COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2496 CATAAAAGAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3279 CCACAGTGCAT 3289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2614 CCATGTGACTAGTGGCTAAGCCATCAGACAGCACAGCTCTATACAATAAAATA--ATAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2979 AGGGCAAAATAATTTTGATATTACTTTTCACCCAGTAGTATACCCCAAAATAGCGAAATAT 3038
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2849 CATATGTAATTTTAAAATTTCTAGTAGCTACATTTAAAAGAAGAAGAACATGTAAAAATTAAT 2790
                                                                                                                                                                                                                                                                      COMPUTER: IBM PS, OPERATING SYSTEM: SOFTWARE: Wordpe:
  REFERENCE/DOCKET
                                                                            APPLICATION NUMBER: FILING DATE: 18-MA
                                                                                                                                    FILING DATE:
                                                                                                                                                        APPLICATION NUMBER:
                                                                                                                                                                                            CLASSIFICATION:
                                                                                                                                                                                                                  FILING DATE:
                                                                                                                                                                                                                                  APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                              MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                      COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                              STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACATGTGGCCTGTGACTACTGTATTGGACAGTTCAGTACTAGACAAAAACTAGCATAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATATTTTATACTTACTGCATTTCCTTACTTCCGAGTAGCCATATTTCAAGTGTTCATTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAAAATCATTAATGAACCATTTATCTTCTTTCTACATACTAATATTTTTGAAATATGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGAAATTATTAATGAGATATTTTACATCCTTTTTTGTACCAAGTCTTCTAAATGCAGTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AACTTAGTTCTAGCCATGATTTCTATTTGGATTAAAATTAAACTCTAATCACAGTTAACT 3278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATGTATTATAATACATG-----CTTATTTCAAACTCCTGTGTTTTAAGTGTTCAATAGCA 2615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACTTTATCCCTTCCCTCTGTATATATCTGCATCCATTAAAAAAGGCAAATATAACTAAAAA 2497
                                                                                                                                                                                                                                                                                                                                                                        10022
                                                                                                                                                                                                                                                                                                                                                                                                                            New York City
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             620111
                                                                                                                                                                                                                                                                                                                                                                                                          New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Application US/09224834
                                                                                                                                                                                                                                                                                                                                                                                                                                              E: Felfe & Lynch
805 Third Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Brichard, Vincent; Van Pel, Aline;
Traversari, Catia; W lfel, Thomas; Coulie, Pierre;
Boon-Falleur, Thierry; De Plaen, Ettenne
VENTION: ISOLATED NUCLEIC ACID SEQUENCE CODING FOR A
VENTION: TUMOR REJECTION ANTIGEN PERCURSOR PROCESSED
                                                                                                                                                                                                                                                                                                                                                                                        USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                            IBM PS/2
                                                                                18-MAR-1993
                                                                                                                                                                                                                                                                                                                                Diskette, 5.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1.4%;
NUMBER:
                                                                                                                                                                                                                                                                                            PC-DOS
                                                                                                08/032,978
                                                                                                                                                        US/08/370,319
                                                                                                                                                                                                                                    US/09/224,834
  LUD 5377.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 61.8; DB 2;
Pred. No. 8.7e-06;
                                                                                                                                                                                                                                                                                                                                inch,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches 157;
                                                                                                                                                                                                                                                                                                                                360 kb storage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 4129;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ТО
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ΑT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LEAST
```

ONE

```
Search completed: March 22, Job time: 2248 secs
                                                                               Вþ
                                                                                                                  Qy
                                                                                                                                                        В
                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                   B
                                                                                                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                                                                                              Вb
                                                                                                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                                                                                                                         Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ; FEATURE:
; OTHER INFORMATION: The sequence is preceded by an ; OTHER INFORMATION: unsequenced portion of from 4.7 to 5.3 ; OTHER INFORMATION: kilobases
US-09-224-834-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 688-9200
TELEPRAX: (212) 838-3884
INFORMATION FOR SEQ ID NO: 12:
SEQUENCE CHARACTERISTICS:
LENGTH: 4129 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match 1.4
Best Local Similarity 53.9
Matches 200; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2556
                                                                                                                                                                               3219 AACTTAGTTCTAGCCATGATTTCTATTTGGATTAAAATTAAACTCTAATCACAGTTAACT 3278
                                                                                                                                                                                                                                                                                                                2669
                                                                                                                                                                                                                                                                                                                                   3099 ATATTITATACTTACTGCATTTCTTACTTCCGAGTAGCCATATTTCAAGTGTTCATTGCC 3158
                                                                                                                                                                                                                                                                                                                                                                                     2729 AAAAATCATTAATGAACCATTTATCTTCTTTTCTACATACTAATATTTTTTGAAATATGAT 2670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2979 AGGGCAAAATTATTTTGATATTTTTCACCCAGTAGTATACCCAAAATAGCGAAATAT 3038
                                                                               2496 CATAAAAGAAT 2486
                                                                                                                  3279 CCACAGTGCAT 3289
                                                                                                                                                                                                                                   3159 ACATGTGGCCTGTGACTACTGTATTGGACAGTTCAGTACTAGACAAAAACTAGCATAATT 3218
                                                                                                                                                                                                                                                                                                                                                                                                         3039 AGAAATTATTAATGAGATATTTTACATCCTTTTTTTGTACCAAGTCTTCTAAATGCAGTAC 3098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2789 CTTAAAATATTTTGTTTAACCTAATATTTTCAGAATATTTTATTTCAAGGTGAATCAATAT 2730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                            ATGTATTATAATACATG-----CTTATTTCAAACTCCTGTGTTTTAAGTGTTCAATAGCA 2615
                                                                                                                                                        ACTITATCCCTTCCCTCTGTATATATCTGCATCCATTAAAAAGGCAAATATAACTAAAAA 2497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1.4%; Score 61.8; DB 4; 53.9%; Pred. No. 8.7e-06; ative 0; Mismatches 157;
                     2003, 09:31:49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 4129;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ω
--
```

THIS PAGE BLANK (USPTO)

```
Minimum
Maximum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                        Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Post-processing: Minimum Match 0%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                          000
                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB
Bd
    70
70
69.2
68.4
68.4
                                                                                               106
97.8
86.8
82.4
81.4
79.6
76.2
76.2
74.8
72.2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Match Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-09-847-046-1
4526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           March 22, 2003, 09:31:52; Search time 329 Seconds (without alignments)
10668.096 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                         Query
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  538826 seqs, 387737923 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IDENTITY_NUC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Published_Applications_NA: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                             /cgn2_6/ptodata/2/pubpna/US07_PUBCOMB.seq:*
/cgn2_6/ptodata/2/pubpna/PCT_NEW_PUB.seq:*
/cgn2_6/ptodata/2/pubpna/US06_NEW_PUB.seq:*
/cgn2_6/ptodata/2/pubpna/US06_NEW_PUB.seq:*
/cgn2_6/ptodata/2/pubpna/US06_PUBCOMB.seq:*
/cgn2_6/ptodata/2/pubpna/US08_NEW_PUB.seq:*
/cgn2_6/ptodata/2/pubpna/US08_NEW_PUB.seq:*
/cgn2_6/ptodata/2/pubpna/US09_NEW_PUB.seq:*
/cgn2_6/ptodata/2/pubpna/US09_NEW_PUB.seq:*
/cgn2_6/ptodata/2/pubpna/US09_NEW_PUB.seq:*
/cgn2_6/ptodata/2/pubpna/US10_NEW_PUB.seq:*
/cgn2_6/ptodata/2/pubpna/US10_PUBCOMB.seq:*
/cgn2_6/ptodata/2/pubpna/US10_PUBCOMB.seq:*
/cgn2_6/ptodata/2/pubpna/US10_PUBCOMB.seq:*
/cgn2_6/ptodata/2/pubpna/US10_PUBCOMB.seq:*
/cgn2_6/ptodata/2/pubpna/US10_PUBCOMB.seq:*
/cgn2_6/ptodata/2/pubpna/US00_PUBCOMB.seq:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GenCore version 5.1.3
Copyright (c) 1993 - 2003 Compugen Ltd
                                  8 147309
7 34337
7 13605
7 13605
7 157875
6 157875
6 197997
5 12047
5 15987
5 147309
                                                                                                                                                                                                                           31208
378361
                                                                                                                                                                                                                                                                                                                          DВ
    01
01
01
01
01
01
01
01
01
01
01
01
                                                                                                                                                                                                                                                            10
10
9
 10 US-09-852-067-3
9 US-09-901-136-3
10 US-09-911-372-39
110 US-09-864-761-11995
110 US-09-864-761-11995
110 US-09-741-149-3
110 US-09-741-149-3
110 US-09-764-877-3446
9 US-10-229-124-3
110 US-09-736-960-86
110 US-09-736-960-86
110 US-09-764-847-1297
110 US-09-764-847-1301
110 US-09-764-847-1301
110 US-09-764-847-1309
110 US-09-764-847-1309
                                                                                                                                                                                                                                                                                                                          ij
                                                                                                                                                                                                                                                                       US-09-847-046-1
US-09-764-864-358
                                                                                                                                                                                                                                                                                                                                                                       SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1077652
Sequence 20, Appli
Sequence 3, Appli
Sequence 1, Appli
Sequence 1, Appli
Sequence 15, Appli
Sequence 1297, Appli
Sequence 1301, Appli
                                                                                                                                                                                                                                                                                                                       Description
                                                                                                                                                                                                                                                                       Sequence 1,
Sequence 35
                                                                                                                                                                                                                                                                         358,
                                                                                                                                                                                                                                                                       , Appli
58, App
```

	O			ဂ	C	C	O		C							O	a	Q	O	a					
45	44	43	42	41	40	39	38	37	36	35	34	3	32	31	30	29	28	27	26	25	24	23	22	21	20
57.8	58	58	58	58.4	60.6	60.6	60.6	60.6	61.4	62.2	62.2	62.2	62.6	63.2	63.2	63.8	63.8	63.8	63.8	64	64.6	65.2	66	66.8	68.4
1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.5	1.5	1.5
3734	63000	31766	7032	197496	174493	174493	143306	1125	485	403	403	403	8807	15714	2547	6945	6945	3425	1745	33206	22889	3599	30352	75899	197997
10	10	10	10	9	10	9	10	10	9	10	10	9	10	10	10	10	10	10	10	10	9	10	10	10	10
US-09-764-853-862	us-09-780-172-18	US-09-765-344-5	US-09-764-847-1429	US-09-877-177-10	US-09-804-471A-3	US-10-238-709-3	US-09-729-920-3	US-09-764-869-2422	US-09-796-692-7988	US-09-795-686-1462	US-09-795-668-1462	US-09-946-807-1462	US-09-764-869-1415	US-09-764-869-2355	US-09-925-302-232	US-09-764-887-314	US-09-764-887-313	US-09-764-887-315	US-09-822-830A-10	US-09-880-107-2380	US-09-860-670-164	US-09-925-297-241	US-09-764-869-1768	US-09-854-883-243	US-09-822-246-3
Sequence 862, App	Sequence 18, Appl	Sequence 5, Appli	Sequence 1429, Ap	Sequence 10, Appl	Sequence 3, Appli	Sequence 3, Appli	Sequence 3, Appli	Sequence 2422, Ap	Sequence 7988, Ap	Sequence 1462, Ap	Sequence 1462, Ap	Sequence 1462, Ap	Sequence 1415, Ap	Sequence 2355, Ap	Sequence 232, App	Sequence 314, App	Sequence 313, App	Sequence 315, App	Sequence 10, Appl	Sequence 2380, Ap	Sequence 164, App	Sequence 241, App	Sequence 1768, Ap	Sequence 243, App	Sequence 3, Appli

ALIGNMENTS

RESULT 1 US-09-847-046-1

Sequence 1, Application US/09847046
Patent No. US20020068036A1

```
GENERAL INFORMATION:

APPLICANT: Havezi, Peter
APPLICANT: Mack, David
APPLICANT: Gish, Kurt c.
APPLICANT: Milson, Keith E.
APPLICANT: Wilson, Keith E.
TITLE OF INVENTION: NOVEL METHODS OF DIAGNOSIS OF
TITLE OF INVENTION: COMPOSITIONS, AND METHODS OF
TITLE OF INVENTION: MODULATORS
FILE REFERENCE: A-69199-1/DJB/JJD/AMS
CURRENT APPLICATION NUMBER: US/09/847,046
CURRENT FILING DATE: 2001-04-30
PRIOR APPLICATION NUMBER: US 09/733,288
PRIOR APPLICATION NUMBER: US 09/733,288
PRIOR APPLICATION NUMBER: US 09/737,766
PRIOR APPLICATION NUMBER: US 09/737,576
                                                                                                                                                                                                                                                                                                    ; LENGTH: 4526
; TYPE: DNA
; ORGANISM: HOMO s
US-09-847-046-1
                           Qy
                                                                      В
                                                                                                        δÃ
                                                                                                                                                   DЬ
                                                                                                                                                                                δÃ
                                                                                                                                                                                                                         Query Match
Best Local Similarity
Matches 4526; Conserv
                                                                                                                                                                                                                                                                                                                                                                              SEQ ID NO 1
                                                                                                                                                                                                                                                                                                                                                                                                                  PRIOR FILING DATE: 2000-10-13 NUMBER OF SEQ ID NOS: 3
                                                                                                                                                                                                                                                                                                                                                                                                  SOFTWARE: PatentIn version 3.1
61
                                                                                                         61 AAGTGGTTCCAGGCTACCCGGCTAGTCTGGCACGGCCCCGTCTTCTGCCTCCTCCTCCGT 120
                                                                                                                                               100.0%; Score 4525.6; ilarity 100.0%; Pred. No. 0; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                        sapiens
                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OF PROSTATE AND/OR BREAST CANCER.
OF SCREENING FOR PROSTATE CANCER
                                                                                                                                                                                                                                                               DB 10; Length 4526;
                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AN
```

1260 1260	CTTGGCGTCTTCTGGGAAAAGCAGGAGTTCTACTCTTGTTAAGGGACTCTTTGGAAGTGA	y 1201 b 1201	D O
1200 1200	TTTTATTGTTAGCCAACAGGCTACTTATGAAGCTGATAGAAGAACTGCAGAATGGGTTG	<u>, , , , , , , , , , , , , , , , , , , </u>	QУ
1140 1140	IGCTGAAGATCCTCAACAAGTTTCAACTGTCCATCTCCAACTGGGCTTACCACTGG 	108 108	b Ø
1080 1080	CATTGACTACACTGAACATTCACCTGTTTATTAAGACAATGAAAGCACCTCTGTTGACTG	11 11	0 0
1020 1020	TTCATTGTAAACTAGTCTTGGACTTGACCCAGCAATGTAGAAGAACACTAATGGAACAGC	9 9	gg Qy
960 960	AAATTGCCCTTTTGGAAAGTATTGGCTCTGAGGATGTGGAATATGCACATCTCTACTTTT	90	D Ø
900	GAGCAGTCATGGAAGCCGGTTTTGTGTATGGGACTACATACCAATTTGTCTTAACCACAG	8 4 8 4	P 04
840 840	TGAAAGGAAAAGCAAATATTATATTCTCATATGTE 	78 78	ОУ
780 780	TTTTTAGTGAAGTGA TTTTTAGTGAAGTGA	72	D D
720 720	CCCTACTGACACCTTGTTTGATGTGAATGCCATTGTCGCCCATGTTCTCTTT 	66	g Vo
660	GAAAAGAAAAGGATTTGATGAAAGCATATTTATTCAAGGGCAACATATTGCTCAGAGAAT 		0 0
600	ACTATGGAATTTCAGTTGCCAAGGTTAATTGTGTCAAAGAAGAAGA 	பா பா	0 0
540 540	ATTTTAGTACATTGCAACCAGGTCTTGAAGAACTGAATGAGGCTG		ру
480 480	TAATGTGCATTTTTTACATGCCAACAGTAAACT	4 4	U O
420 420	AACTGCAGCTGATAATGTTTTCCGGCTTCAATGTCTTTAGAGTTGGGATCTCTTTTGTCA	ωω	g Vo
360 360	AGTGTTGTCTTAGGAAACAGAACACAGCAGTGAAAAAACAGACAAAATCCGCTCAGATAC	ωω	g VQ
300	ATTTGAAAGTAGCAAAATAGAAAATAAAGAATTAACAGCAGATACAGAGGACAGGATGGA 	N N	g VQ
240	GTCCGGGCAGATAACAI 	18	ду

1261 1321 1321 1381 1381 1381 1441 1441 1501 1501 1501 1621 1621 1681 1681 1981 1981 1981 1981 1981 2041 2161 2261 2281	- Qy	Qy	Оу	Qy Db	Оу	Qy	Оу	Оду	Оу	Оу	Qy	Оу	Qy	Qy	Оду	Оду	Ор	Ор	Qy
CARTICULGARANGUS AND SUBSTITUTE CARACIGUS CONTROLL CONTROL CONTROLL CONTROL CONTR	23	22	2 2 2	216 216	21	20	19	192 192	18	18	174 174	168	162	15	15	144 144	138 138	132 132	126 126
	AGAGGAATCTTGCGGGCATATTTTGATCCTCTGCCTCCCCCTTCCTCTTCTTGTTTTG	AGAAATACTTGGATTCATTTACTCCATGCTGGTTAAATCTAAAGAATACTCCAGTGG 		TTCCGGAAATCACTGTGGAAAATCTTCCCAGTTATTTCAGACTTCAGAAACCATTATTGA	AGCTAGCACACATGCACAAGACATAGTTCAAATAATAACAGATGCACTACTGGAAATGT 			GTCCAACCATGAAAACAGCAAAAGAAGATTTTAGTGAAGCAGGAAACTACCTAAAAGGAT			AGAACCCAGTATCTTATGCTGGAATGTTAGGAACCAAAGATCTCCTAAAATTTATCCAGC	ATGTATGTACTAAGCAAAATGTTACTGAATTTCCTATCATAAAGATGTACAAGAAGAAGGCG	TTAAACTGAAAGGCACATCTACTATGCTTCTTACTAGAATAAACTGTGCAGATTGGTCTG		4-4	ATGAAGTGGCAGAACTGTTTTCAGAGATAGGAAGAGAAAATTACCTTTGGAACTTACAG	AGGAAATACAAGAAGATGAAGACAATGACATGGAAGGTCCAGATATAGATGTTCAGGATG	TTTTGGTATTACATGATGTTGATTTAATAATATCTCATGTGGAAAATAATATGCACATTG	ACATTCCTCAAGATGCTAATGTGGTCTTCAAAAGAGCAGAAGAGGGAGTTCCAGTGGAAT

4501 АGAATACCTTCAAAAAAAAAAAAAAA 4526	l Db	
01 AGAATACCTTCAAAAAAAAAAAAAAAAA	Qy	OY 3421 TAGTGAGTAGAGGCCATGGATCCTGCTAAATAACCTGCATTGGACAGCGCCCCCACAACAA 3480
	Db	QY 3361 GATATTTAGCAATTGTCGGGAGACATTTTTGATGTCATGACTAGGGCAGTTATTGACATT 3420
381	Q D :	OY 3301 ACAGTTATATTTGTTTTATTGGAGTCATGATATTAAAATCAGCGTTTGTCAACCTCAGGG 3360
ω ω ω	OV Db	QY 3241 CTATTTGGATTAAAATTAAACTCTAATCACAGTTAACTCCACAGTGCATTCATGCAGCTG 3300
+	0 dg	QY 3181 ATTGGACAGTTCAGTACTAGACAAAAACTAGCATAATTAACTTAGTTCTAGCCATGATTT 3240
201		QY 3121 CTTACTTCCGAGTAGCCATATTCAAGTGTTCATTGCCACATGTGGCCTGTGACTACTGT 3180
	d d	Qy 3061 TACATCCTTTTTGTACCAAGTCTTCTAAATGCAGTACATATTTTATACTTACT
1	O DD	QY 3001 ACTTTTCACCCAGTAGTATACCCAAAATAGCGAAATATAGAAATTATTAATGAGATATTT 3060
	Qy Db	2941 2941
3961 TCCAAATCACTTAGCTGTTAGACTGACATATATATATATA	0	QY 2881 AAGTTTGCAGACTAGTGCCATCCAATAGAATTATAATATAAGTCACATATTTTATTTA
	D	OY 2821 AAATTTTTTTGGCATGATAGACTTAATTTATTTCCTTAAAGAATAATATTAAATCATTTC 2880
2 4 5	D 4	Qy 2761 GACGTGATAAAGAGTTAGGATGCTCAAAAGTGAACTAATTTTATAGGGCTGTGGGTTTCCA 2820
,	0	Qy 2701 CTCTGAGAATAAAGCATTGGAATAGAAGTAATTGGTTTAAAGAAGCAGAAAAATCATTTA 2760
3/21 GATATITATATITAAGTGAGATCTGAAAACCTG	9 4g	Qy 2641 AGGAGAATGATAAGGAACAACATGAAGATAAATCGGCAGTCAGAAAAGAACCGATTGAAA 2700
61	Db Oy	QY 2581 CCGCAACATCTCAACGTGGCACTAGGAAAGTTCCCAAGTGTATGAAAGAAA
	Qy	QY 2521 TACCTGCTCAAGAATGGAAACCTCCTCTTCCAGCTTATGATTTTCTAAGTATGATAGATG 2580
	da VY	OY 2461 AAAACCTTGTATTGTGGCTGAAGAAATTAGAAGCAGGACTAGAAAATCATATCACAATTT 2520
81	2 20	Qy 2401 TGAATCTGCATTCAGGTGGCCAAGTATTTGCATTTCCTTCAGACCAGGCTATAATTGAAG 2460
3421 TAGTGAGTAGAGGCCATGGATCCTGCTAAATAA	od Db	

	1 1		: 2
	GAATACCTTCAAAAAAAAAAAA	4501	Qy
4500	GTCAGCAATTTTGACAGTCATTAATGTTTGTCATAATTTTAAATAAA	4441	DЪ
4500	TCAGCAATTTTGACAGTCATTAATGTTTTGTCATAAATTTTAAATAAA	4441	Qy
4440	GAAAATGCTAATTAAGTACCAGCACATAGAAACATGAAATTGCTTAGTCATTGTACCTTT	4381	рь
4440	AAAATGCTAATTAAGTACCAGCACATAGAAACATGAAATTGCTTAGTCATTGTACCT	4381	Qy
4380	CAATGAGAGTGAACTCTAAATATAGGTTGTAGTAATAAAACATCATTAGCCTAATTATTA	4321	Db
4380	AATGAGAGTGAACTCTAAATATAGGTTGTAGTAATAAAACATCATTAGCCTAATTATT	4321	Qy
4320		4261	Db
4320	TGTAGCATGTGATGCCTGATTAAACTCATTTTCATTTTGCTTTTATTTCTAATATGGGA	4261	Qy
4260	MTATTTCCTTATAACATAGACCCGTTGCTACTCTCAGCACCCTCTCCTCAATTTTTTTC	4201	Db
4260	ATTTCCTTATAACATAGACCCGTTGCTACTCTCAGCACCCTCTCCTCAATTTTTTTT	4201	Qy
4200	ACAACTGATTTTTATAACTGAAATTTAAGGAATCTAACAGCTAAAACTCAGTAAGTGCAT	4141	Db
4200	CAACTGATTTTTATAACTGAAATTTAAGGAATCTAACAGCTAAAACTCAGTAAGTG	4141	Оу
4140	TTTTTAATATCTACTTGATATCTTGTTCTTTAAATTTTCTTCACATATGGTTTGCCTGAT	4081	Дb
4140	TTTTAATATCTACTTGATATCTTGTTCTTTAAATTTTCTTCACATATGGTTTGCCTC	4081	Qy
4080	CTGTGCATTTTTTGAGACATTTGTTGAGAATATTCTATTTGGTGCTCTACTGTATTTTTC	4021	Db
4080	TGTGCATTTTTTGAGACATTTGTTGAGAATATTCTATTTGGTGCTCTACTGTATTT	4021	Оу
4020	TCCAAATCACTTAGCTGTTAGACTGATCTGTTTGTAGCAGTTGTTTGT	3961	ф
4020	CCAAATCACTTAGCTGTTAGACTGATCTGTTTGTAGCAGTTGTTTTTTTT	3961	Qy
3960	TGAGCCACACGGCCTCATTCTGTGAGGGAGGGAAAGATTAGCCAAAGAGTTAATTTTCAT	3901	ДЪ
3960	AGCCACACGGCCTCATTCTGTGAGGGAGGGAAAGATTAGCCAAAGAGTTAATTTT	3901	ОУ
3900	TCATCTGAAGCGTCTCTGAAATCTACCCTTGCAAGCTTCAGACAAATCAGTTGATCTCCC	3841	Db
3900	CATCTGAAGCGTCTCTGAAATCTACCCTTGCAAGCTTCAGACAAATCAGTTGATCTCC	3841	Оy
3840	AATTTCAGATTGAACAGGGATTCAGCATTCTGCCATCTCCTCATGGAAAGAGAGGCTCCC	3781	Db
3840	TITCAGATTGAACAGGGATTCAGCATTCTGCCATCTCCTCATGGAAAGAGAGAG	3781	Qy
3780	GATATTTATATTTTAAGTGAGTCTTAAAACCTCCTCTTATTTCTACAAGTTATATGGCTA	3721	Db
3780	ATAITTATATTTAAGTGAGTCTTAAAACCTCCTCTTATTTCTACAAGTTATATGGCT	3721	Qy
3720	CTTGATCTTTTCTAATATTTTCAGAAAGTGATGGGATAACCCTAGAAGAGGACTCAGAAT	3661	дb
3720	TTGATCTTTTCTAATATTTTTCAGAAAGTGATGGGATAACCCTAGAAGAGGACTCAGAA	3661	Qy
3660	AATTTTGGCTATTAAAGATATGTATTAGATGGTCTTATCCTGATTATTACCTGGATACAA	3601	Дb
3660	TTTTGGCTATTAAAGATATGTATTAGATGGTCTTATCCTGATTATTACCTGGÀTAC	3601	Qy
3600	ACCTGTGGCAGACTAGGTTTCCAGAATTTCCTGGTTCTGCTCACGTATCATGTTTGAAAA	3541	Db
3600	CCTGTGGCAGACTAGGTTTCCAGAATTTCCTGGTTCTGCTCACGTATCATGTTTG	3541	Qy
3540	AGAATTATCCTGCCCGAAATGGTAGTCGTGCCAAGGCTGAGTAACCTTGTGTTAAAAGTA	3481	фd
3540	AATTATCCTGCCCGAAATGGTAGTCGTGCCAAGGCTGAGTAACCTTGTGTTAAAAC	3481	Qy
3480	TAGTGAGTAGAGGCCATGGATCCTGCTAAATAACCTGCATTGGACAGCGCCCCACAACAA	3421	Db

```
δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                        RESULT 3
US-10-121-235-20
                                                                                                                                                                                    Ş
                                                                                                                                                                                                                     рь
                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 2
US-09-764-864-358
                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-764-864-358
                       Sequence 20, Application US/10121235
Publication No. US20030032609A1
GENERAL INFORMATION:
APPLICANT: Lee, Mu-En
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 358, Application US/09764864 Patent No. US20020132753A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOFTWARE: PatentIn Ver. 2.0 SEQ ID NO 358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Rosen et al.
TITLE OF INVENTION: Nucleic Acids, Proteins, and
FILE REFERENCE: PTZ23
CURRENT APPLICATION NUMBER: US/09/764,864
CURRENT FILING DATE: 2001-01-17
Prior application data removed - consult PALM or
NUMBER OF SEQ ID NOS: 1792
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LOCATION: (12)
OTHER INFORMATION: n e
NAME/KEY: SITE
LOCATION: (32)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME/KEY: SITE
LOCATION: (1369)
OTHER INFORMATION: n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME/KEY: SITE
LOCATION: (1272)
OTHER INFORMATION: n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OTHER INFORMATION: n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NAME/KEY: SITE
                                                                                                                                                                                       3197
                                                                                                                                                                                                                                                     3138
                                                                                                                                                                                                                                                                                                                                                                                  3019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LENGTH:
                                                                                                                                                                                                                                                                                                      2964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2904 AATAGAATTATAAATATAAGTCACATATTTTATTTAAAATTTTCTAGTAACTACATTAAAAC 2963
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2844 TAATTTATTTCCTTAAAGAATAATATTAAATCATTTCAAGTTTGCAGACTAGTGCCCATCC 2903
                                                                                                                                                                                                                                                                                                                                                    829
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            651 TAAACTTTGGTCTACTTCAATAATAACCACTTAATATAATGTTCTAGAGCAGCGCTGTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local Similarity
nes 230; Conserv
1
                                                                                                                                                                                       CTAG 3200
                                                                                                                                                                                                                                        ATATTTCAAGTGTTCA-TTGCCACATGTGGCCTGTGACTACTGTATTGGACAGTTCAGTA 3196
                                                                                                                                                                                                                                                                                                                                                                     TACCCAAAATAGCGAAATATAGAAATTATTAATGAGATATTTTACATCCTTTT-TTGTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATAGAAATATAATCTGAGCCACATGTATÄATTTT--ATTTTCTTGTAGCCACATTAAAA
                                                                                                                                                         CTAG 1012
                                                                                                                                                                                                                                                                                     CTAGTCTTCAAAATCTGGTATGTATCTTACATTGATAGCACATCTCACTTTGTACTAGCC
                                                                                                                                                                                                                     ACATTGCAAGTGCTCAGTAGCCACATGTGGCTAGTGGCTACTGCACTGGACAGCACAGTT
                                                                                                                                                                                                                                                                                                                                                    ATTTGAACATGTAATTAATATAAAATTATTAATGTGATATTTTACATTCTTTTGGTAATA
                                                                                                                                                                                                                                                                                                                                                                                                                 AAGTAAAAAGATACAAGTAGAACTAATTTTAATGTTTTAATTCAGTATATCCAAAAATATC
                                                                                                                                                                                                                                                                                                                                                                                                                                               AAAGTAAAAGTGAGCAGGGCAAAA-----TAATTTTGATATTACTTTTCACCCAGTAGTA 3018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         equals
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     equals
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   equals
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       equals
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   a,t,g, or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         a,t,g,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      a,t,g,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   a,t,g,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches 125;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 106; DB 10;
Pred. No. 1.4e-13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       or.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  file
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Antibodies
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                    888
                                                                                                                                                                                                                                                                                                                   3137
                                                                                                                                                                                                                                                                                                                                                                                 3077
                                                                                                                                                                                                                                                                                     948
                                                                                                                                                                                                                                                                                                                                                                                                                 828
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4;
```

```
Sequence 3, Application US/09852067

Patent NO. US20020076777A1

GENERAL INFORMATION:
APPLICANT: MERKULOV, Gennady et al
TITLE OF INVENTION: ISOLATED HUMAN DRUG-METABOLIZING
TITLE OF INVENTION: PROTEINS, NUCLEIC ACID MOLECULES ENCODING HUMAN
TITLE OF INVENTION: AND USES THEREOF
FILE REFERENCE: CL000897-CIP
CURRENT APPLICATION NUMBER: US/09/852,067
: CURRENT FILING DATE: 2001-05-10
NUMBER OF SEQ ID NOS: 4
SOFTWARE: FASTSEQ for Windows Version 4.0

SEQ ID NO 3
                               ; NAME/KEY: misc_feature
; LOCATION: (1)...(31208)
; OTHER INFORMATION: n = .
US-09-852-067-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; TYPE: DNA
; ORGANISM: Homo sapiens
US-10-121-235-20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Qy
                                                                                                                                                                                                                                                                                                                                                                                                     US-09-852-067-3/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 2.2%;
Best Local Similarity 65.2%;
Matches 208; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOFTWARE: FOR SEQ ID NO 20
Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CURRENT APPLICATION NUMBER: US/10/121,235
CURRENT FILING DATE: 2002-04-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRIOR APPLICATION NUMBER: US 09/374,454
PRIOR FILING DATE: 1999-08-13
PRIOR APPLICATION NUMBER: US 60/096,515
PRIOR FILING DATE: 1998-08-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: Maemura, Koji
APPLICANT: Hsieh, Chung-Ming
TITLE OF INVENTION: METHODS OF MODULATING
FILE REFERENCE: 05433/037001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NUMBER OF SEQ ID NOS: 22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
                                                                                                               TYPE: DNA
ORGANISM: Human
                                                                                                   FEATURE:
                                                                                                                                                  LENGTH: 31208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4797 AGAGCAGCGCTGTCCAATAGAAATATAATCTGAGCCACATGTATAATTT--TATTTCTT 4854
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5095 CTGGACAGCACAGTTCTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3182 TTGGACAGTTCAGTACTAG 3200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3004 TTTCACCCAGTAGTATACCCAAAATAGCGAAATATAGAAATTATTAATGAGATATTTTTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4855 CTAGCCACATTAAAGAAGTAAAAAGATACAAGTAGAACTAATTTTAATGTTTTAATTCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2949
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTAACTACATTAAACAAAGTAAAAGTGAGCAGGGCAAAA-----TAATTTTGATATTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TATATCCAAAATATCATTTGAACATGTAATTAATATAAAATTATTAATGTGATATTTTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      6792
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FastSEQ for Windows Version
                                                  A, T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5113
                                                ò
                                                or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 97.8; DB 9;
Pred. No. 1.9e-11;
0; Mismatches 102;
 Score
 86
 .
8.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  OF.
 DВ
 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 6792;
Length 31208;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5034
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4914
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4974
```

4

```
οy
                               В
                                                            Qy
                                                                                                 B
                                                                                                                              γΩ
                                                                                                                                                             B
                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Вp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Вр
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                             Db 239445
                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                               US-09-901-136-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GENERAL INFORMATION:
APPLICANT: HU, Song et al.
TITLE OF INVENTION: ISOLATED HUMAN SECRETED
TITLE OF INVENTION: NUCLEIC ACID MOLECULES
TITLE OF INVENTION: USES THEREOF
FILE REFERENCE: CL001273
CURRENT APPLICATION NUMBER: US/09/901,136
CURRENT FILING DATE: 2001-07-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-901-136-3/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 3, Application US/09901136 Publication No. US20030039968A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQ ID NO 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Local Similarity
                                                                                                                                                                                                                                                                                           Matches 183; Conservative
                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOFTWARE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NUMBER OF SEQ ID NOS:
                                                                                                                                                             239385 TAGTCTCATTAAAAATTGTACTGAGATTAATTTTAATAGTATATTTTATTCGACCCAATA 239326
                                                                                                                                                                                                                                                                                                                                                                          NAME/KEY: misc_feature
LOCATION: (1)...(378361)
OTHER INFORMATION: n = A
                                                                                                                                                                                                                                                                                                                                                                                                                                         TYPE: DNA
ORGANISM: Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    27551 GTACCTTCAGAC 27540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             27847 CTAGCACCGATCAATAGAAATATAATGTGATCTACATGTGTAATTTAAAAATGTTCTGGTG 27788
                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 27671 GGGTACTATGTCTTCAAAATCCAGCACGTATTTTAAACTTACAGCACAACTCAATTCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 27731
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LENGTH: 378361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3012
                                                                                                                                                                                                                                              2889 AGACTAGTGCCATCCAATAGAATTATAATATAAGTCACATATTTTATTTTAAAATTTTCTA 2948
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2952
                                                                                                                                                                                                                                                                                                              Local Similarity
 CCGAGTAGCCATATTTCAAGTGTTCATTGCCACATGTGGCCTGTGACTACTGTATTGGAC 3187
                                                                                                              C-CCAGTAGTATACCCAAAATAGCGAAATATAGAAATTATTAATGAGATATTTTACATCC 3067
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTGGCCACATGTCATGTGCTCAGTAGCCGTATGTGGCCCGTGGCTACTACACTGGGCAGT 27552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTAGCCATATTTCAAGTGTTCA-TTGCCACATGTGGCCTGTGACTACTGTATTGGACAGT 3190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACTACATTAAACAAAGTAAAAGTGAGCAGGGCAAAATAATTTTGATATTACTTTTCACCC 3011
                                                                                                                                                                                            GTAACTACATTAAACAAAGTAAAAGTGAGCAGGGCAAAATAATTTTGATATTACTTTTCA 3008
                                                                                                                                                                                                                             TCAGTACTAGAC 3202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCATTCCAACCTGTAATCAATAATAATTACTAAAAGGAAATGTTTCACATTTTTTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGTAGTATACCCAAAATAGCGAAATATAGAAATTATTAATGAGATATTTTACATCCTTTT 3071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTCACATTTTTAAAAGGTGAAGTTAAT----CTTAATAGAGTTTATTTAACCAAAAATTA
                                                               FastSEQ for Windows Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                           1.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          59.3%;
                                                                                                                                                                                                                                                                                                                                                                          A,T,C or
                                                                                                                                                                                                                                                                                             0; Mismatches 131; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pred. No. 1e-08;
                                                                                                                                                                                                                                                                                                         Score 82.4; DB 9;
Pred. No. 3.1e-07;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches 122;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PROTEINS,
ENCODING
                                                                                                                                                                                                                                                                                                                          Length 378361;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HUMAN SECRETED PROTEINS, AND
                                                                                                                                                                                                                                                                                           2; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 27612
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             27732
                                                                                                                                                                                                                                                                                             2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2
                                                                                                                                                                                                                                                                                                                                           QY
                                                                                                                                                                                                                                                                                                                                                                                                       δð
                                                                                                                                                                                                                                                                                                                                                                                                                                          Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         рь
                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             239205
 PRIOR APPLICATION NUMBER: US 60/207,456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                          3142
                                                                                                                                                                                                                                                                                                                                                                                                                                            954
                                                                                                                                                                                                                                                                                                              834
                                                                                                                                                                                                                                                                                                                                                                            894
```

```
US-09-731-872-239
                                                                                                                                                                                                                                                                                                                                                                          US-09-864-761-11995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-731-872-239/c
Sequence 11995, Application US/09864761

Patent No. US2002048763A1

Patent No. US2002048763A1

GENERAL INFORMATION:
APPLICANT: Penn, Sharron G.
APPLICANT: Hanzel, David K.
APPLICANT: Hanzel, David K.
APPLICANT: Chen, Wensheng
TITLE OF INVENTION: HUMAN GENOME-DERIVED SINGLE EXON NUCLEIC ACID PROBES USEFUL FO
TITLE OF INVENTION: GENE EXPRESSION ANALYSIS BY MICROARRAY

FILE REFERENCE: Acomica-X-1

CURRENT APPLICATION NUMBER: US/09/864,761

CURRENT ETLING DATE: 2001-05-23

PRIOR APPLICATION NUMBER: US 60/180,312

PRIOR FILING DATE: 2000-02-04

DERIOR FILING DATE: 2000-02-04
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQ ID NO 239
LENGTH: 1083
TYPE: DNA
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 239, Application US/09731872 Patent No. US20020102604A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Dumas Milne Edwards, Jean Baptiste
APPLICANT: Bougueleret, Lydie
APPLICANT: Bougueleret, Everin
TITLE OF INVENTION: FULL-LENGTH HUMAN cDNAS ENCODING POTENTIALLY SECRETED PROTEINS
FILE REFERENCE: 78.US3.REG
CURRENT APPLICATION NUMBER: US/09/731,872
CURRENT FILING DATE: 2000-12-07
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            239146 GGCACAGGTCTAGACA 239131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRIOR APPLICATION NUMBER: US 60/169,629 PRIOR FILING DATE: 1999-12-08
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NUMBER OF SEQ ID NOS:
SOFTWARE: Patent.pm
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRIOR FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRIOR APPLICATION NUMBER: US 60/187,470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME/KEY: CDS
LOCATION: 421..768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3024 AAAATAGCGAAATATAGAAATTATTAATGAGATATTTTTACATCCTTTTTT--GTACCAAG 3081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3202 CAAAA 3206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3082 TCTTCTAAATGCAGTACATATTTTATACTTACTGCATTTCTTACTTCCGAGTAGCCATAT 3141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1014 AATAAATGTAAGAAAAAAATTGTTAATGAGAAATTTTACATTCTTTTTTTGGTACTAAG 955
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local Similarity 68.0 ies 127; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTATA 830
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTCAAGTGCTCAGTAGTGCATGTGGCCTAGTGGCCGCCATGTTGGACGGCACAGTGCTATA 835
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTCAAGTGTTCATTGCCACATGTGGCCTGTGACTACTGTATTGGACAGTTCAGTACTAGA 3201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCTTGGAAATCTGGTGTCTATTCTTTATTTACAGCACATCTCAATGTGGGCTAGCCACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2000-03-06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 81.4;
Pred. No. 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .2e-08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                56;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 1083;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1.
```

FILING DATE: 2000-08-03 APPLICATION NUMBER: GB 24263.6

APPLICATION NUMBER:

US 09/632,366

```
Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; OTHER INFORMATION: MAP TO ACO21880.2
; OTHER INFORMATION: EXPRESSED IN FETAL LIVER, SIGNAL ; OTHER INFORMATION: EXPRESSED IN BRAIN, SIGNAL = 0.5
; OTHER INFORMATION: EXPRESSED IN ADULT LIVER, SIGNAL ; OTHER INFORMATION: EXPRESSED IN BONE MARROW, SIGNAL US-09-864-761-11995
                                                                                       Ş
                                                                                                                                 밁
                                                                                                                                                                    Ş
                                                                                                                                                                                                              망
                                                                                                                                                                                                                                              οy
                                                                                                                                                                                                                                                                                        망
                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                     Š
                 Ş
                                                       망
                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQ ID NO 11995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOFTWARE: Annomax
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NUMBER OF SEQ ID NOS: 49117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM: Homo sapiens
                 3147
                                                                                                                                                                        3027
                                                                                                                                                                                                                                                                                                                                                                                     2859 AAGAATAATATTAAATCATTTCAAGTTTIGCAGACTAGTGCCATCCAATAGAATTATAATA 2918
                                                                                                                                                                                                                                                                                                                             2919 TAAGTCACATATTTTATTTAAAATTTTCTAGTAACTACA-TTAAACAAAGTAAAAGTGAG
                                                                                                                                   382
                                                                                                                                                                                                              322
                                                                                                                                                                                                                                                                                          262
                                                                                                                                                                                                                                                                                                                                                                   202 AAAATTTTAATCCAAATCAACCAAATCTCTAGATCAGTGCTCTCCAATAGAAATACAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE: 2001-01-30
APPLICATION NUMBER: PCT/US01/00670
FILING DATE: 2001-01-30
APPLICATION NUMBER: US 60/234,687
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: PCT/US01/00663 FILING DATE: 2001-01-30 APPLICATION NUMBER: PCT/US01/00662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FILING DATE: 2001-01-30
APPLICATION NUMBER: PCT/US01/00665
FILING DATE: 2001-01-30
APPLICATION NUMBER: PCT/US01/00668
FILING DATE: 2001-01-30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: PCT/US01/00667
FILING DATE: 2001-01-30
APPLICATION NUMBER: PCT/US01/00664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FILING DATE: 2000-10-04
APPLICATION NUMBER: US 60/236,359
FILING DATE: 2000-09-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILING DATE: 2001-01-30
APPLICATION NUMBER: PCT/US01/00669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER: US 09/774,203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: US 09/608,408 FILING DATE: 2000-06-30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: PCT/US01/00661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FILING DATE: 2001-01-30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER: PCT/US01/00666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILING DATE: 2000-09-21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FILING DATE:
GTGTTCATTG-CCACATGTGGCCTGTGACTACTGTATTGGACAGTTCAG
                                                                                                                                                                                                                                                                                        CAAGCCACATGTTTAAAACTAAATATTCTAGTAGCCACATTTTAAAAAAGTAAAACAGGT
                                                                                           TAAATGCAGTACATATTTTATACTTACTGCATTTCTTACTTCCGAGTAGCCATATTTCAA 3146
                                                                                                                                                                                                                                                  CAGGGCAAAATAATTTTGATATTACTTTTCACCCAGTAGTATA-------CCCAAA
                                                       AAAATCCAGTGTGCGTTTTACACTTAGAGCACATCTCAATGAGGA-----CCTCATTTCAA
                                                                                                                                   ATAGCGAAATATAGAAATTATTAATGAGATATTTTACATCCTTTTTTGTACCAAGTCTTC
                                                                                                                                                                                                              GAAATCAATGTTAATAATATTTTAACCCAATATATCAAATATATTATCACTTCAACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                               210;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence Listing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2001-01-29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2001-01-30
                                                                                                                                                                                                                                                                                                                                                                                                                                                             1.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 79.8; DB 10;
Pred. No. 5.2e-08;
0; Mismatches 122;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Engine vers.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length
                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            . .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0.6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0.6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                546;
                                                                                                                                                                                                                                                                                                                                                                                                                                           17;
                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                        3086
                                                                                                                                                                                                                                                    3026
                                                                                                                                                                                                                                                                                          321
                                                                                                                                                                                                                                                                                                                             2977
                                                         497
                                                                                                                                   441
                                                                                                                                                                                                              381
                                                                                                                                                                                                                                                                                                                                                                                                                                           4
```

A

```
δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Db 131864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Db 132044 AAAAGATGAGCCACATAGGTAAGTTTTCAATTTTCTACTAGCCCCCATTCTAAAAAGTAAAA 131985
                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-741-149-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-742-312-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-742-312-3/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                               NUMBER OF SEQ I
SOFTWARE: Fasts
SEQ ID NO 3
LENGTH: 34337
                                                                                                                                                                                                                                                    GENERAL INFORMATION:
APPLICANT: LI, Zhenya et al
TITLE OF INVENTION: ISOLATED HUMAN TRANSPORTER PROTEINS,
TITLE OF INVENTION: NUCLEIC ACID MOLECULES ENCODING HUM
TITLE OF INVENTION: AND USES THEREOF
FILE REFERENCE: CL000780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 3, Application US/09742312 Patent No. US20020045166A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                Sequence 3, Application US/09741149 Patent No. US20020031800A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOFTWARE: 1
SEQ ID NO 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches 183;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: CHANDRAMOULISARAN, Ishwar et al TITLE OF INVENTION: ISOLATED HUMAN TRANSPORTER PROTEINS, TITLE OF INVENTION: NUCLEIC ACID MOLECULES ENCODING HUMAN TRANSPORTER PROTEINS, TITLE OF INVENTION: AND USES THEREOF ETLE REFERENCE: CL000838
CURRENT EPPLICATION NUMBER: US/09/742,312
CURRENT FILING DATE: 2000-12-22
                                                                                                                                                                                                         CURRENT APPLICATION NUMBER: US/09/741,149
CURRENT FILING DATE: 2000-12-21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     131924 CAACATGTAAGCATTATAAAACAATATTAAGATAGCTTACCGTATTGTTTTCATACTAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             131984 TTGAACAGGTGAAATTAATTTTAGTAATATTTTAATGCAGTAGATCAAAAATATCATTT 131925
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NUMBER OF SEQ ID NOS: 4
SOFTWARE: FastSEQ for Windows
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME/KEY: misc_feature
LOCATION: (1)...(147309)
OTHER INFORMATION: n = A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TYPE: DNA
ORGANISM: Human
NAME/KEY: misc_feature LOCATION: (1)...(34337)
                                               FEATURE:
                                                                ORGANISM: Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2913 ATAATATAAGTCACATATTTTATTTAAAATTTTCTAGTAACTACATTAAACAAAGTAAAA 2972
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3142 TTCAAGTG-TTCATTGCCACATGTGGCCTGTGACTGTATTGGACAGTTCAGTA 3196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2973 GTGAGCAGGGCAAAATAATTTTGATATTACTTTTCACCCAGTAG-----TATAC 3021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            498 GTGCTCAGCGACCATGTGTGGCTGGTGGCCGTGGTATTGGACAGCACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCTTCAAACTCCAGTGTGAATTTTATCCTTACAGCACATCT--ATTTAGACCAGCCACAT 131807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCAAAATAGCGAAATATAGAAATTATTAATGAGATATTTTACATCCTTTTTTGTACCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTTAAGTGCTTGATAGGCGTATGTGGTTAGTGGCTACCACACTGGACAGCACAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCTTCTAAATGCAGTACATATTTTATACTTACTGCATTTCTTACTTCCGAGTAGCCATAT 3141
                                                                                                                    34337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             147309
                                                                                                                                                               FastSEQ
                                                                                                                                                                                         ID NOS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                 ror
                                                                                                                                                               Windows Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A,T,C or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Version

 Mismatches

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 79.6; DB 10
Pred. No. 8.2e-07;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             99;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 147309
                                                                                                                                                                                                                                                                                                         HUMAN TRANSPORTER PROTEINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     131865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           w
~
```

```
Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; OTHER INFORMATION: n = US-09-741-149-3
                  Ş
                                                   В
                                                                                    Š
                                                                                                                       В
                                                                                                                                                     γ
                                                                                                                                                                                             밁
                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                     ; SEQ ID NO 3446;
LENGTH: 13605
; TYPE: DNA
; ORGANISM: Homo sapiens
US-09-764-877-3446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 10
US-09-764-877-3446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 3446, Application US/09764877 Patent No. US20020147140A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                            CURRENT FILING DATE: 2001-01-17
Prior application data removed -
NUMBER OF SEQ ID NOS: 4031
SOFTWARE: Patentin Ver. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CURRENT APPLICATION NUMBER: US/09/764,877
CURRENT FILING DATE: 2001-01-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Rosen et al.
TITLE OF INVENTION: Nucleic Acids, Proteins,
FILE REFERENCE: PC005
                    3038
                                                                                                                                                                                             3027
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9181
                                                                                                                           3084
                                                                                                                                                          2920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3062
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2943
                                                                                                                                                                                                                              2860 AGAATAATATTAAATCATTTCAAGTTTGCAGACTAGTGCCATCCAATAGAATTATAATAT 2919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9414 TTTGACAATGCTTACCCAGGGAGTCAATCCCATAATTCCAAGGGTAGTAGGGGTGAT 9470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2823 ATTTTTTTGGCATGATAGACTTAATTTATTTCCTTAAAGAATAATATTAAATCATTTCAA 2882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    tocal Sim
                                                                                                                                                                                                                                                                y Match 1.7%;
Local Similarity 55.2%;
hes 191; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTTTGCAGACTAGTGCCATCCAATAGAATTATAATAATAAGTCACATATTTTATTAAAAT 2942
TAGAAATTATTAATGAGATATTTTACATCCTTTTTTGTACCAGCTCTTCTAAATGCAGTA 3097
                                                                                                                         GAGCCACATGTATAACTTCAATTGTCTAGTTAGCCTCATTAGGAAAAGCAAAAATAACTT 3143
                                                                                                                                           AAGTCACATATTTTATTTAAAAATTTTCTAGTAACTACATTAAACAAAGTAAAAGTGA--G 2977
                                                                                                                                                                                             ACACTACTGCTTATCCATCTCTTATTTCTAGACCAGCACTGTCCTATAGAAAT----ATGT 3083
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTTCTAGT-AACTTAAACAAAGTAAAAGTGAGCAGGGCAAAATAATTTTGATATTA 3001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCACCTATAGTAGTGATGTCTAGTAAACATAGATTGTAATGCACAGATATAGTTTATATT 9180
                                                     TAATACATTTTATTTAACCCAGTATATCAGAAATATTGTCATTTCAACATGAAATCAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTGGACAGTTCAGTACTAGACAAAAACTAGCATAATTAACTTAGTTCTAGCCATGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCACTTTAGATTGGCCCCATTTC-----TAAAGCAACATGTGGCCAGCAGCTAGCATA 9413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTACTTCCGAGTAGCCATATTTCAAGTGTTCATTGCCACATGTGGCCTGTGACTACTGTA 3181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACAATAATTTTCTTATACTGAATCTGAAATCTAGTTCAAATTTTCACATTTTGTAACCCATG. 9360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTTTTCACCCAGTAGTATACCCAAAATAGCGAAATATAGAAATTATTAATGAGATATTTT 3061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTTCAAGTAAACATGTTTAAAGAAAGTAAAAAGAAATAGATGAAATATTTTACTTAATCT 9240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAGGGCAAAATAATTTTGATATTACTTTTCACCCAGTAGTATACCCAAAATAGCGAAATA 3037
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A,T,C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0; Mismatches 183;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           압
                                                                                                                                                                                                                                                                   0; Mismatches 150;
                                                                                                                                                                                                                                                                                Score 76; DB 10;
Pred. No. 1.6e-06;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 76.2; DB 10 Pred. No. 2.3e-06;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 refer to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PALM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       and Antibodies
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 or
                                                                                                                                                                                                                                                                                                   Length 13605;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 file
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 34337;
                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                               wrapper
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9;
                                                                                                                                                                                                                                                                5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                Gaps
                                                     3203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    w
                                                                                                                                                                                                                                                                2;
```

```
Ъ
                                                                                                                                                                              QY
                                                                                                                                                                                                                       DЪ
                                                                                                                                                                                                                                                            Q
                                                                                                                                                                                                                                                                                                      Д
                                                                                                                                                                                                                                                                                                                                         Q
                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 11
US-10-229-124-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Вb
                                                              US-09-935-464-1
Sequence 1, Application US/09935464 Publication No. US20030027153A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 3, Application US/10229124
Publication No. US20030013168A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOFTWARE: FastSEQ for Windows Version SEQ ID NO 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches 188;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: WEI, Ming-Hui et al.
TITLE OF INVENTION: ISOLATED HUMAN ENZYME PROTEINS,
TITLE OF INVENTION: ACID MOLECULES ENCODING HUMAN I
TITLE OF INVENTION: THEREOF
FILE REFERENCE: CLOO1139DIV
CURRENT APPLICATION NUMBER: US/10/229,124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NUMBER OF SEQ ID NOS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CURRENT FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                22230 TCCAATAGAAATATAATGTCAGTCATACACATAATTTAAAAATTTCTACTAGCCACATTA
                                                                                                                                          22528
                                                                                                                                                                                                                                                                                                      22408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME/KEY: misc_feature LOCATION: (1)...(65042) OTHER INFORMATION: n =
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM: Human FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYPE: DNA
                                                                                                                                                                                                                         22468
                                                                                                                                                                                  3193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LENGTH: 65042
                                                                                                                                                                                                                                          3134 AGCCATATTTCAAGTGTT-CATTGCCACATGTGGCCTGTGACTGCTGTATTGGACAGTTC 3192
                                                                                                                                                                                                                                                                                                                        2961 AACAAAGTAAAAGTGAGCAGGGCAAAATTAATTTTGATATTACTTTTTCACCCCAGTAGTATA 3020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2901 TCCAATAGAATTATAATATAAGTCACATATTTTATTTAAAATTTTCTAGTAACTACATTA 2960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3204 TAAAAATTTATGATTGAGATATTTTACATTCCTTTTGTTCTAAAATCTTTAAAATCCAGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGCATTTTACACTTACAGCACATCTCAGTTCAGACAAGCCACAGTCAGATGCTCAATAAT 3323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CACATGTGGCTAGTGGTTGCCGGACTGTACAGCTCACCTTTTGAAA 3369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CACATGTGGCCTGTGACTACTGTATTGGACAGTTCAGTACTAGACA 3203
                                                                                                                                                                                                                                                                                                                                                                                                                        CCCAAAATAGCGAAATATAGAAATTATTAATGAGATATT-----TTACATCCTTTTTT 3073
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CATATTTTATACTTACTGCATTTCTTACTTCCGAGTAGCCATATTTCAAGTGTTCATTGC
                                                                                                                                          AGCTGTAGAATGTGACTTGC
                                                                                                                                                                              AGTACTAGACAAAAACTAGC
                                                                                                                                                                                                                                                                                                      GTTCTGCATCCTCAAAATGCCAAATGCATTCTATACATCACATCACATCTCGATCCAAACT
                                                                                                                                                                                                                                                                                                                                                                                     CAAGACATTATCATTTCAACATGTAATCAATACAAAAATAATGAGATTTTTGGCATTTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A - - AAAGTAAAAACAGGTAAAATTAATTTTACTAAAATATTTTATGTAACCAAAAATATC
                                                                                                                                                                                                                       AGCCACACATCAAGTGTTAAATAACCACATGTAGATAAAAGCCACTGTATCAGATAGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2002-08-28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A,T,C
                                                                                                                                                                                  3212
                                                                                                                                          22547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 74.8; DB 9;
Pred. No. 6.3e-06;
0; Mismatches 122;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ENZYME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 65042;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PROTEINS, AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                         22527
                                                                                                                                                                                                                                                                                                      22467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 22347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                22289
                                                                                                                                                                                                                                                                                                                                                                                     22407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                USES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               w
••
```

APPLICANT: Meyer, Joanne APPLICANT: Barrington-Martin, APPLICANT: Parker, Alexander TITLE OF INVENTION: METHODS AND

Rory

AND COMPOSITIONS FOR DIAGNOSING AND TREATING NEUROPSYC

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 13
US-09-736-960-86/c
: Sequence 86, Application US/09736960
: Patent No. US20020102267A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; TYPE: DNA; ORGANISM: Homo sapiens US-09-935-464-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOFTWARE: PatentIn version 3.0 SEQ ID NO 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
                                      PRIOR APPLICATION NUMBER: US 60/196,267 PRIOR FILING DATE: 2000-04-11
                                                                                                                       PRIOR APPLICATION NUMBER: US 60/176,195
PRIOR FILING DATE: 2000-01-14
PRIOR APPLICATION NUMBER: US 60/182,296
PRIOR FILING DATE: 2000-02-14
                                                                                                                                                                                                                                                                    PRIOR APPLICATION NUMBER: US 60/160,860 PRIOR FILING DATE: 1999-10-21 PRIOR APPLICATION NUMBER: US 60/162,498
                                                                                                                                                                                                                                                                                                                                     CURRENT FILING DATE: 2001-09-20
                                                                                                                                                                                                                                                                                                                                                                           TITLE OF INVENTION: CLASP-5 Training REFERENCE: 020054-000511US
                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR FILING DATE: 2001-01-09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE OF INVENTION: DISORDERS SUCH AS SCHIZOPHRENIA FILE REFERENCE: 3322/11702 USC CURRENT APPLICATION NUMBER: US/09/935,464 CURRENT FILING DATE: 2001-08-23
                                                                                 PRIOR FILING DATE: 2000-04-11
                                                                                                                                                                                                           PRIOR APPLICATION NUMBER: US 60/170,453 PRIOR FILING DATE: 1999-12-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Lu, Peter
                                                                                                  PRIOR APPLICATION NUMBER: US 09/547, 276
                                                                                                                                                                                                                                                   PRIOR FILING DATE: 1999-10-29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NUMBER OF SEQ ID NOS: 90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    88550 AATGGCTACCATAGTGGAAA 88569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 88310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              88250 AGAGCAGTGCCAATAAAAATAGAATGGGAGCCACATAGGCAATCGTGAGTTTTCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   88430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3051
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2949 GTAACTACATTAAACAAAGTAAAAA-------GTGAGCAGGGCAAAATAATTTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2889 AGACTAGTGCCATCCAATAGAATTATAATATAAAGTCACATATTTTAATTTTAAAATTTTTCTA 2948
                   APPLICATION NUMBER: US 60/196,460
FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               190;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGTGACTACTGTATTGGACA 3188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TACAGCACATCTCAGTGTGGACTTGCCAAGTTTTCAAGTGCTCGACAGTCGCATGTGGCT 88549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TACTGCATTTCTTACTTCCGAGTAGCCA--TATTTCAAGTGTTCATTGCCACATGTGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGAGATAGTTTACATTTTTTCCATACCAAGTCTTCCAAATCTGGTGTGTATTCCACACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGAGATATTTTACATCCTTTTTTGTACCAAGTCTTCTAAATGCAGTACATATTTTATACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATAATTCAATCTATCCAGAATGTTATCACTTCAACATGGAATCAATATAAAAATGATTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATATTACTTTTCACCCAG-----TAGTATACCCAAAATAGCGAAATATAGAAATTATTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTAGCCACAGTGAAAAAAAGTGAAAGAAAGGAGTGATGGTATCATGAATAACCATATTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        157875
                                                                                                                                                                                                                                                                                                                                                                                                                    Garman, Jonathan David
Candia III, Albert Frederick
Arbor Vita Corporation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1.6%;
                                                                                                                                                                                                                                                                                                                                                                                                Transmembrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 74; DB 9;
Pred. No. 1.4e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             110;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 157875;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   88489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3050
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               88369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                88309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  88429
```

```
В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ρy
                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 14
US-09-822-246-3/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δã
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; OTHER INFORMATION: ordered human genomic DNA at CLASP-5 locus \mathtt{US}\text{-}09\text{-}736\text{-}960\text{-}86
                                                                                                                                                                                                                                  GENERAL INFORMATION:
APPLICANT: MERKULOV, Gennady et al.
TITLE OF INVENTION: ISOLATED HUMAN TRANSPORTER PROTEINS,
TITLE OF INVENTION: NUCLEIC ACID MOLECULES ENCODING HUM
TITLE OF INVENTION: AND USES THEREOF
FILE REFERENCE: CL001149
                                                                                                                               SOFTWARE:
                                                                                                                                                                                                                                                                                                                                                                 Sequence 3, Application US/09822246 Patent No. US20020142383A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOFTWARE: PatentIn Ver. SEQ ID NO 86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches 181;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local
                                                                                                                                                                                           CURRENT APPLICATION NUMBER: US/09/822,246 CURRENT FILING DATE: 2001-04-02
                                                                                                                                                                        NUMBER OF SEQ ID NOS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRIOR FILING DATE: 2000-10-13
PRIOR APPLICATION NUMBER: US 60/240,508
PRIOR FILING DATE: 2000-10-13
PRIOR APPLICATION NUMBER: US 60/240,539
PRIOR FILING DATE: 2000-10-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRIOR PRIOR
                                                                TYPE: DNA ORGANISM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NUMBER OF SEQ ID NOS: 134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRIOR APPLICATION NUMBER: US PRIOR FILING DATE: 2000-10-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR APPLICATION NUMBER: US 09/687,837
NAME/KEY: misc_feature LOCATION: (1)...(197997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            23820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             24060
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TYPE: DNA
                                                 FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              23760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             24000 AAAAGTGAAATTATTTTTAATATTTTTGTTTATCCTAAAAGATAAAAAAATACTGTCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM: Homo sapiens
                                                                                                           LENGTH: 197997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              23880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                23940
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LENGTH: 66686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2913 ATAATATAAGTCACATATTTTATTTAAAATTTTCTAGTAACTACATTAAACAAAGTAAAA 2972
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2973
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Match . 1.6%;
Local Similarity 59.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE: 2000-10-13
APPLICATION NUMBER: US 60/240,503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FILING DATE: 2000-04-11
APPLICATION NUMBER: US 60/196,528
FILING DATE: 2000-04-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATTTCAAG-TGTTCATTGCCACATGTGGCCTGTGACTGTATTGGACAGTTCAGTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTGAGCAGGGCAAAATAATTTTGATATTTACTTTTCACCCAGTAGTATACCCAAAATAGC- 3031
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAAAATCTGGTGCGTATTTTTCACTTATCTTGATTTATCTCAATTTGAACTAGCCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTARATGCAGTACATATTTATACTT-----ACTGCATTTCTTACTTCCGAGTAGCCAT 3139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATGTAAGCAATATAAAAATTACTAGTGAAATATTTTATTCTTTTATTCACAATAAGCCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -----GAAATATAGAAATTATTAATGAGATATTTTACATCCTTTTTTGTACCAAGTCTT 3085
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATTTCAAGCATTTGATAGTCACATGTGGCTAATGGCTACTGTATTGGACAGCACAAATCT
                                                                                                                                                  FastSEQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              23758
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                    for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   60/240,543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 72.2; DB 10;
Pred. No. 2.4e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches 108;
                                                                                                                                                                                                                                                                                 ENCODING HUMAN TRANSPORTER PROTEINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 66686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                23881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               23941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ω
··
```

or G

```
SOPTWARE: PatentIn Ver. 2.0
SEQ ID NO 1297
LENGTH: 12047
TYPE: DNA
ORGANISM: Homo sapiens
US-09-764-847-1297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; OTHER INFORMATION: n = A,T,C US-09-822-246-3
                          Qy
                                                                   Ъ
                                                                                                      Qy
                                                                                                                                                  Вb
                                                                                                                                                                                       δĀ
                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                          QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 15
US-09-764-847-1297
Sequence 1297, Application US/09764847
Patent No. US20020132767A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
APPLICANT: ROSEN et al.
TITLE OF INVENTION: Nucleic Acids, Proteins,
FILE REFERENCE: PC009
                                                                                                                                                                                                                                                                                                                   Query Match 1.5%; Score 70; DB 10; Length 12047; Best Local Similarity 59.2%; Pred. No. 3.2e-05; Matches 174; Conservative 0; Mismatches 115; Indels 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches 216; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CURRENT APPLICATION NUMBER: US/09/764,847
CURRENT FILING DATE: 2001-01-17
Prior application data removed - consult PALM or file wrapper NUMBER OF SEQ ID NOS: 2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    74087
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 73847 CTTGACTGTTGCCTCATTTTACA 73825
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   73967
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     74147 TCACGTAAAGTTAATTTTAATATATAGTCATTTAACCCCAATATATGTAAAATATTATTTT 7408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        74207 AAAATGTGAGCCACGTATGTAATTTTAAATTTTTCCAGAAGAGACATTAAAACAAAACAA 74148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   74027
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3142
                                                                     1471
                                                                                                               3027
                                                                                                                                                      1411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3201 ACAAAAACTAGCATAATTAACTTAGTTCTAGCCATGATTTCTATTTGGATTAAAATTAAA 3260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3085
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3087 TAAATGCAGTACATATTTTATACTTACTGCATTTCTTACTTCCGAGTAGCCATATTTCAA 3146
                                                                                                                                                                          2967 GTAAAAGTGAGCAGGGCAAAATAATTTTTGATATTTTCACCCCAGTAGTATACCCAAA 3026
                                                                                                                                                                                                                                1351 AGAGGAAAGAAAAGAAAAGAAATATTTAAGTCACATATGTGATTTCTAAAAGTAAAAAG 1410
                                                                                                                                                                                                                                                                        2907 AGAATTATAATATAAGTCACATATTTTATTTAAAAATTTTCTAGTAACTACATTAAACAAA 2966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2913 ATAATATAAGTCACATATTTTATTTAAAATTTTCTAGTAACTACATTAAACAAAGTAAAA 2972
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2973 GTGAGCAGGGCAAAATAATTTTGATATTACTTTTCACCCAGTAGTATACCCAA-----A 3026
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Match 1.6%;
Local Similarity 56.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTGAAATCCACTGCTATGTATTTATACCTACAACACATCTCAACTTGGACTAGTCACAT 73968
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCTAAATGCA---GTACATATTTTATACTTACTGCATTTCTTACTTCCGAGTAGCCATAT 3141
                                                                                     ATAGCGAAATATAGAAATTATTAATGAGATATTTTACATCCTTTTTTTGTACCAAGTCTTC 3086
                                                                                                                                                  AAACAGATGAAATTAGTAATATTTTTAAAATCCAGTATATCCCAAGTATGGTTATTTT 1470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTCTAATCACAGTTAACTCCACA 3283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TICAAGTGCTTGGTAGCTACATGAAGCTAGTGGTTACCATGTTGGACAACGCAGCTCTAA 73908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTCAAGTG-TTCATTGCCACATGTGGCCTGTGACTACTGTATTGGACAGTTCAGTACTAG 3200
                                                                   AGCATGTAATCAATATA-AAATAATAAGATATTTTACATTCTTTTTT---TCTAGTCTTT 1526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 71; DB 10; Length 197997;
Pred. No. 7.3e-05;
0; Mismatches 155; Indels 12; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         and Antibodies
                                                                                                                                                                                                                                                                                                                      5;
                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                      ω,.
```

```
밁
1527 GAAATTTGGTGCATATTTTACACTTATGGCACATCTCAATTCAGACTATCCACATTTCAA
    1586
```

QΥ 밁

Search completed: March 22, 2003, 14:37:45 Job time: 2155 secs

THIS PAGE BLANK (USPTO)

```
Minimum DB seq
Maximum DB seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Post-processing: Minimum Match 0%
Maximum Match 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Scoring table:
             C
                                                                            0000
                                                                                                                                                                            a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                         4016.6
934.6
354.2
                                                                                                                                                                                                           341
312
265.8
257
245
228
188.6
181
179
             108.4
103.2
103.2
102.8
98.8
98.2
98.2
97.8
93.4
93.4
                                                                                                                                                                                                                                                                                                                                                                                                                            Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pending_Patents_NA_New:*

1: /cgn2_6/ptodata/2/pna/U
2: /cgn2_6/ptodata/2/pna/U
3: /cgn2_6/ptodata/2/pna/U
4: /cgn2_6/ptodata/2/pna/U
5: /cgn2_6/ptodata/2/pna/U
5: /cgn2_6/ptodata/2/pna/U
6: /cgn2_6/ptodata/2/pna/U
8: /cgn2_6/ptodata/2/pna/U
9: /cgn2_6/ptodata/2/pna/U
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                           Match Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                March 22, 2003, 08:55:02; Search time 1200 Seconds (without alignments) 9783.383 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4747046 seqs, 1296957505 residues
                                                                          Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    //cgn2_6/ptodata/2/pna/PCT_NEW_COMB.seq:*
//cgn2_6/ptodata/2/pna/USO6_NEW_COMB.seq:*
//cgn2_6/ptodata/2/pna/USO7_NEW_COMB.seq:*
//cgn2_6/ptodata/2/pna/USO9_NEW_COMB.seq:*
//cgn2_6/ptodata/2/pna/USO9_NEW_COMB.seq:*
//cgn2_6/ptodata/2/pna/USO9_NEW_COMB.seq:*
//cgn2_6/ptodata/2/pna/USO9_NEW_COMB.seq:*
//cgn2_6/ptodata/2/pna/USO1_NEW_COMB.seq:*
//cgn2_6/ptodata/2/pna/USO1_NEW_COMB.seq2:*
//cgn2_6/ptodata/2/pna/USO1_NEW_COMB.seq2:*
          70.6 3756 8
7.8 435 6
7.8 355 6
6.9 313 6
5.9 496 8
5.0 228 8
4.0 181 5
4.0 181 5
4.0 191 8
4.0 191 8
2.3 76321 6
2.3 76321 6
2.3 76321 6
2.3 76321 6
2.3 2867436 5
2.2 2682138 5
2.2 195910 6
2.2 195910 6
2.2 195910 6
2.3 30603 8
2.1 302603 8
2.1 302603 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GenCore version Copyright (c) 1993 - 2003
8 US-10-342-887-77

8 US-10-144-771-15372

6 US-09-912-293-92043

6 US-09-913-990-32911

8 US-10-349-781-15516

8 US-10-349-781-36747

8 US-10-349-781-36747

8 US-10-349-781-36366

91 US-09-912-293-9611

15 US-09-912-293-18131

11 US-09-947-911-240

21 6 US-10-349-781-24291

22 6 US-10-349-781-23200

426 5 US-09-947-911-240

23 6 US-09-947-911-230

24 6 US-09-947-912-230

25 US-09-947-912-230

26 US-09-947-912-230

27 US-09-949-002-682

28 US-10-126-052A-165

503 1 PCT-US02-32700-8

503 8 US-10-711-416-8

503 8 US-09-947-911-55
                                                                                                                                                                                                                                                                                                                                                                                                                           DВ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100%
                                                                                                                                                                                                                                                                                                                                                                                                                           ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5.1.3
Compugen Ltd
      Sequence 77, Appl Sequence 15372, A Sequence 92043, A Sequence 9911, A Sequence 96911, A Sequence 15516, A Sequence 15516, A Sequence 18131, A Sequence 24291, A Sequence 18131, A Sequence 2300, App Sequence 270, App Sequence 270, App Sequence 803, App Sequence 803, App Sequence 803, App Sequence 469, App Sequence 682, App Sequence 682, App Sequence 682, App Sequence 682, Appli Sequence 8, Appli Sequence 55, Appli Sequence 55, Appli Sequence 55, Appli
                                                                                                                                                                                                                                                                                                                                                                                                                      Description
```

	O	a	Ω	ი	O	O	a			ဂ	O	O				o	ი			O	O
	45	44	43	42	41	40	39	38	37	36	35	3 4	3	3 2	31	30	29	28	27	26	25
	77.8	77.8	78.4	78.8	79	79.2	79.4	79.4	79.4	79.4	79.6	80.6	81.2	82.4	83.2	83.6	84.2	85	86.2	86.8	87
	1.7	1.7	1.7	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9
	2605602	151152	488	32433	59998	708988	3436920	72178	71848	601	145606	601	366	13712	2865598	481258	1059516	2593930	663380	31208	96596
	5	9	6	Н	6	ഗ	ഗ	9	6	σ	9	თ	6	8	υ	σı	ر ت	տ	ഗ	æ	1
ALIGNMENTS	US-09-947-911-314	US-60-446-133-243	US-09-912-293-13634	PCT-US02-41414-1148	US-09-949-004-608	US-09-947-911-172	US-09-947-911-49	US-09-949-004-471	US-09-949-004-691	US-09-949-004-6560	US-60-444-614-7	US-09-949-004-6559	US-09-912-293-117056	US-10-311-455-1504	US-09-947-911-26	US-09-947-911-94	US-09-947-911-86	US-09-947-911-54	US-09-947-911-327	US-10-338-691-3	PCT-US02-41414-1022
	Sequence 314, App	Sequence 243, App	Sequence 13634, A	Sequence 1148, Ap		Sequence 172, App	Sequence 49, Appl		Sequence 691, App	Sequence 6560, Ap	Sequence 7, Appli	Sequence 6559, Ap	Sequence 117056,		Sequence 26, Appl	Sequence 94, Appl	Sequence 86, Appl	Sequence 54, Appl	Sequence 327, App	Sequence 3, Appli	Sequence 1022, Ap

```
Sequence 77, Application US/10342887

GENERAL INFORMATION:
APPLICANT: He, Yudong
APPLICANT: He, Yudong
APPLICANT: He, Yudong
APPLICANT: He, Yudong
APPLICANT: Mao, Mao
APPLICANT: Roberts, Christopher J.
APPLICANT: Wan, Yt Veer, Laura Johanna
APPLICANT: Van de Vijver, Marc J.
APPLICANT: Bernards, Rene
TITLE OF INVENTION: Diagnosis and Prognosis of
FILE REFERENCE: 9301-188-999
CURRENT APPLICATION NUMBER: US/10/342,887
CURRENT FILING DATE: 2003-01-15
PRIOR APPLICATION NUMBER: 60/298,918
PRIOR APPLICATION NUMBER: 60/298,918
PRIOR FILING DATE: 2002-05-14
PRIOR FILING DATE: 2002-06-14
PRIOR FILING DATE: 2002-06-14
PRIOR APPLICATION NUMBER: 10/172,118
PRIOR APPLICATION NUMBER: 10/172,118
PRIOR APPLICATION NUMBER: 10/172,118
PRIOR FILING DATE: 2002-06-14
                                                                                                                                                                                                                                                                                                                                                                        ; LENGTH: 4135
; TYPE: DNA
; ORGANISM: Homo sapiens
US-10-342-887-77
                                                          밁
                                                                                          Q
                                                                                                                                  밁
                                                                                                                                                                  Qy
                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-10-342-887-77
                                                                                                                                                                                                                                                                                       Query Match 88.7%;
Best Local Similarity 98.7%;
Matches 4080; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                    NUMBER OF SEQ ID NOS: 2699 SEQ ID NO 77
                                                                                                                                                                        491
                      557
                                                          121
                                                                                                                                                                                                                                                       431 TTTTTACATGCCAACAGTAAACTCTTTACCAGAACTGAGTCCTCAGAAATATTTTAGTAC 490
                                                                                                                                    61
                                                                                                                                                                                                                 \vdash
TGCCAAGGTTAATTGTGTCAAAGAAGAAGATATCAAGATACTGTGGAAAAGAAAAGATTT
                                                        ----TCTTGAAGAACTGAATGAGGCTGTTAGACCTCTGCAGGACTATGGAATTTCAGT
                                                                                                                                                                          ATTGCAACCAGG-----
                                                                                                                                                                                                               ATTGCAACCAGGAAAAGCCTCTTTAGCTTATTTTTGTCAAGCTGATTCCCCCAAGAACATC
                                                                                                                                                                                                                                                                                         ; Score 4016.6; pred. No. 0; 1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     of Breast Cancer Patients
                                                                                                                                                                                                                                                                                                                                   DB
                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                 8;
                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                               Length
                                                                                                                                                                            ......
                                                                                                                                                                                                                                                                                                                                   4135;
                                                                                                                                                                                                                                                                                             54;
                                                                                                                                                                                                                                                                                           Gaps
                    616
                                                                                              556
                                                            180
                                                                                                                                                                                                                 60
```

1;

Db 2341 TTGGAATAGAAGTAATTGGTTTAAAGAAGCAGAAAAATCATTTAGACGTGATAAAGAGTT	Qy 1637 ATCTACTATGCTTACTAGAATAAACTGTGCAGATTGGTCTGATGTATGT	
2281	OY 1577 AGCAGTATCCATGGCATTTTTGCAATCCTATATTGATGTGGCAGTTAAACTGAAAGGCAC 1636	
2597 2221 2657	QY 1517 AACATTTAATGCAACAGTGACTGGCTCTGACAGCATAGTACTCTTCTATGCTGGTTGGCA 1576	
2537 2161	Qy 1457 TGTTTTCAGAGAGAGAAAAATTACCTTTGGAACTTACAGTGGAACTAACAGAAGA 1516 	
2101	QY 1397 TGAAGACAATGAAGATGAAGGTCCAGATATAGATGTTCAGGATGATGAAGTGGCAGAAAC 1456	
2041	QY 1337 TGTTGATTTAATAATATCTCATGTGGAAAATAATATGCACATTGAGGAAATACAAGAAGA 1396	
2357 1981	QY 1277 TAATGTGGTCTTCAAAAGAGCAGAAGAGGGAGTTCCAGTGGAATTTTTGGTATTACATGA 1336	
1921	QY 1217 AAAAGCAGGAGTTCTACTCTTGTTAAGGGACTCTTTGGAAGTGAACATTCCTCAAGATGC 1276	
1861	QY 1157 ACAGGCTACTTATGAAGCTGATAGAAGAACTGCAGAATGGGTTTGCTTGGGTCTTCTGGG 1216	
1801	QY 1097 TCAACAAGTTTCAACTGTCCCATCTCCAACTGGGCTTACCACTGGTTTTTATTGTTAGCCA 1156	
1741	QY 1037 CATTCACCTGTTTATTAAGACAATGAAAGCACCTCTGTTGACTGAAGTTGCTGAAGATCC 1096	
1681	OY 977 CTTGGACTTGACCCAGCAATGTAGAAGAACACTAATGGAACAGCCATTGACTACACTGAA 1036	
1621	Qy 917 AAGTATTGGCTCTGAGGATGTGGAATATGCACATCTCTACTTTTTTCATTGTAAACTAGT 976	
1561	Qy 857 CGGTTTTGTGTATGGGACTACATACCAATTTGTCTTAACCACAGAAATTGCCCTTTTGGA 916	
1501	QY 797 TATTATATTCTCATATGTAAGAGCCATTGGAATACCAGAGCACAGAGCACAGTCATGGAAGC 856	
1441	Qy 737 ATATATTACCAACCTGGAAGACCTTCAGAACATAGAAAATGCTCTGAAAGGAAAAGCAAA 796	
1381	Qy 677 GTTTGATGTGAATGCCATTGTCGCCCATGTTCTCTTTGCTCTTTTAGTGAAGTGAA 736	
QY 1697 AAATGTTACTGAATTTTCCTATCATAAAGATGTACAAGAAAGGCGAGAACCCAGTATCTTA	Db 181 TGCCAAGGTTAATTGTGTCAAAGAAGAATATCAAGATACTGTGGAAAAAAGAAAAGGATTT 240 Qy 617 GATGAAAGCATATTTATTCAAGGGCAACATATTGCTCAGAGAATTCCCTACTGACACCTT 676	

ţ

 2056
1680
2116
1740
2176
11740
2176
2176
1800
1800
19236
1920
2236
1920
2356

```
8
            밁
                       Q
                                      В
                                                 Qy
                                                              밁
                                                                        ρ
                                                                                        Вþ
                                                                                                Qy
                                                                                                              Дb
                                                                                                                           Qy
                                                                                                                                          Вр
                                                                                                                                                    Qy
                                                                                                                                                                    В
                                                                                                                                                                              οy
                                                                                                                                                                                              Ъ
                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                  망
                                                                                                                                                                                                                                                          QΥ
                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                    Qγ
                                                                                                                                                                                                                                                                                                 망
                                                                                                                                                                                                                                                                                                             QΥ
                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                         Q
                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                          ρ
                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                              Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                    2461
3857
             3421
                         3797
                                      3361
                                                   3737
                                                                3301
                                                                            3677
                                                                                         3241
                                                                                                      3617
                                                                                                                  3181
                                                                                                                              3557
                                                                                                                                           3121
                                                                                                                                                        3497
                                                                                                                                                                     3061
                                                                                                                                                                                  3437
                                                                                                                                                                                               3001
                                                                                                                                                                                                            3377
                                                                                                                                                                                                                        2941
                                                                                                                                                                                                                                     3317
                                                                                                                                                                                                                                                  2881
                                                                                                                                                                                                                                                              3257
                                                                                                                                                                                                                                                                           2821
                                                                                                                                                                                                                                                                                        3197
                                                                                                                                                                                                                                                                                                     2761
                                                                                                                                                                                                                                                                                                                 3137
                                                                                                                                                                                                                                                                                                                              2701
                                                                                                                                                                                                                                                                                                                                          3077
                                                                                                                                                                                                                                                                                                                                                        2641
                                                                                                                                                                                                                                                                                                                                                                    3017
                                                                                                                                                                                                                                                                                                                                                                                 2581
                                                                                                                                                                                                                                                                                                                                                                                              2957
                                                                                                                                                                                                                                                                                                                                                                                                           2521
                                                                                                                                                                                                                                                                                                                                                                                                                       2897
                                                                                                                                                                                                                                                                                                                                                                                                                                                 2837
                                                                                                                                                                                                                                                                                                                                                                                                                                                              2401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2777
            GATATGTATTAGATGGTCTTATCCTGATTATTACCTGGATACAACTTGATCTTTTCTAAT
                                                                                                                AAATGGTAGTCGTGCCAAGGCTGAGTAACCTTGTGTTAAAAGTAACCTGTGGCAGACTAG
                                                                                                                                                                    TGGATCCTGCTAAATAACCTGCATTGGACAGCGCCCCACAACAAAGAATTATCCTGCCCG
                                                                                                                                                                                              CTAGACAAAAACTAGCATAATTAACTTAGTTCTAGCCATGATTTCTATTTGGATTAAAAAT
                                                                                                                                                                                                                                                                                                           CATATTTCAAGTGTGACTACATTGCCACATGTGGCCTGTGACTACTGTATTGGACAGTTCAGTA
                                                                                                                                                                                                                                                                                                                            AGGATGCTCAAAAGTGAACTATTTTATAGGGCTGTGGTTTCCAAAATTTTTTTGGCATG
                                                                      ATTTTCAGAAAGTGATGGGATAACCCTAGAAGAGGACTCAGAATGATATTTATATTTTAA
                                                                                                                                                                                                                                                                                                   CATATTTCAAGTGTTCATTGCCACATGTGGCCTGTGACTACTGTATTGGACAGTTCAGTA
                                                                                                                                                                                                                                                                                                                                                              TATACCCAAAATAGCGAAATATAGAAATTATTAATGAGATATTTTACATCCTTTTTTGTA
TGAAATCTACCCTTGCAAGCTTCAGACAAATCAGTTGATCTCCCTGAGCCACACGGCCTC
                                                                                                                                                                                                                                                                           CTAGACAAAAACTAGCATAATTAACTTAGTTCTAGCCATGATTTCTATTTGGATTAAAAT
                                                                                                                                                                                                                                                                                                                                                       TATACCCAAAATAGCGAAATATAGAAATTATTAATGAGATATTTTACATCCTTTTTTGTA
                                                               ATTTTCAGAAAGTGATGGGATAACCCTAGAAGAGGACTCAGAATGATATTTATATTTTAA
                                                   3796
                                                                            3736
                                                                                                    3676
                                                                                                                                                                                 3496
                                                                                                                                                                                                           3436
                                                                                                                                                                                                                                                             3316
                                                                                                                                                                                                                                                                                        3256
                                                                                                                                                                                                                                                                                                                3196
                                                                                                                                                                                                                                                                                                                             2760
                                                                                                                                                                                                                                                                                                                                                      2700
                                                                                                                                                                                                                                                                                                                                                                   3076
3916
             3480
                         3856
                                      3420
                                                               3360
                                                                                         3300
                                                                                                                 3240
                                                                                                                              3616
                                                                                                                                                       3556
                                                                                                                                                                     3120
                                                                                                                                                                                              3060
                                                                                                                                                                                                                        3000
                                                                                                                                                                                                                                    3376
                                                                                                                                                                                                                                                                          2880
                                                                                                                                                                                                                                                                                                    2820
                                                                                                                                                                                                                                                                                                                                                                                                                                                              2460
                                                                                                                                                                                                                                                  2940
                                                                                                                                                                                                                                                                                                                                                                                 2640
                                                                                                                                                                                                                                                                                                                                                                                             3016
                                                                                                                                                                                                                                                                                                                                                                                                          2580
                                                                                                                                                                                                                                                                                                                                                                                                                       2956
                                                                                                                                                                                                                                                                                                                                                                                                                                    2520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2836
                                                                                                                                                                                                                                                                                                                                                                                                                                                 2896
```

	517	\vdash	0у 5
	493	TCTCTCCCAGAACTGACTCCTCAGCAATATTTCAGCACACTGCAGCCAGGAAAAGCCTC 49	Db 4
•	502	2 CTCTTTACCAGAACTGAGTCCTCAGAAATATTTTAGTACATTGCAACCAGG 50	Qу 45
	451 433	2 TGTCTTTAGAGTTGGGATCTCTTTTGTCATAATGTGCATTTTTACATGCCAACAGTAAA 45 	Qy 39 Db 37
11;	sdi	/ Match 20.6%; Score 934.6; DB 8; Length 3756; Local Similarity 63.7%; Pred. No. 2.5e-186; nes 1859; Conservative 0; Mismatches 614; Indels 446; Gaps	Query Best 1 Match
		TH: : DI NISN 4-7	ς.
		CURRENT APPLICATION UNMER: US/10/144,771 CURRENT FILING DATE: 2002-05-15 UNMBER OF SEQ ID NOS: 47235 SEQ ID NO 15372	CURRE; CURRE; NUMBE; SEQ ID
		IL INFOMMATION: (CANT: VENTER, J. Craig 3 OF INVENTION: HUMAN GENOME DISCOVERY SYSTEM AND USES THEREOF BFFFFFFNCF. CIONI321	APPL TITL
		, 4-771-15372 ICE 15372, Application US/10144771	RESULT : US-10-1: ; Seque:
		31 GTCATTAATGTTTGTCATAATTTAAATAAAGTGTCTGGGTTTCAGAATACCTTC 4135	Db 4081
		57 GTCATTAATGTTTGTCATAATTTTAAATAAAGTGTCTGGGTTTCAGAATACCTTC 4511	QУ 4457
	4456 4080	TACCAGCACATAGAAACATGAAATTGCTTAGTCATTGTACCTTTGTCAGCAATTTTGACA	Qy 4397 Db 4021
	4020	AAATATAGGTTGTAGTAATAAAACATCATTAGCCTAATTATTAGAAAATGCTAATTAAG	Db 391
	4396	TAAATATAGGTTGTAGTAAATAAAACATCATTAGCCTAATTATTAGAAAAATGCTAATTAAG 4	Qу 4337
	96		39
	4336	7 CTGATTAAACTCATTTTCATTTGCTTTTATTTCTAATATGGGAACAATGAGAGTGAACTC 43	Qy 427
	4276 3900	7 TAGACCCGTTGCTACTCTACACCCCTCTCCTCAATTTTTTTT	Qy 421 Db 384
	3840	1 ACTGAAATTTAAGGAATCTAACAGCTAAAACTCAGTAAGTGCATCTATTTCCTTATAACA 38	Db 378
	4216	ACTGAAATTTAAGGAATCTAACAGCTAAAACTCAGTAAGTGCATMTATTTCCTTATAACA 4	Qy 4157
	3780	7	37
	4156	GATATCTTGTTCTTTAAATTTTTCTTCACATATGGTTTGCCTGATACAACTGATTTTTATA 4	Qy 4097
	3720	1 ACATTTGTTGAGAATATTCTACTTGGTGCTCTACTGTATTTTTTTT	Db 361
	3000	TACARTERIAGA CAARACA TIGIRIGA ARAACA	. u
	03	GTTAGACTGATCTGTTTGTAGCAGTTGTTTGTCTCATTTTTGCTCTCTGTGCATTTTTTGAG	39
	3600	w	Db 35
	3976	ATTCTGTGAGGGAGGGAAAGATTAGCCAAAGAGTTAATTTTCATTCCAAATCACTTAGCT	Qу 3917
	3540	G	Db 341

QY

	u	3	
.97	GGCTTCTGACAGCATAGTACTCTTCTATGCTGGTTGGCAAGCAGTATCCATGGCATTTTT 15	1538	Qy
45	ACCACTACCTTTGGAGTTGTCTGTGGAGCTAACAGAGGAGACTTTTAATACAACGGTCAT 13	1286	Db
37	AAAATTACCTTTGGAACTTACAGTGGAACTAACAGAAGAAGAAACATTTAATGCAACAGTGAT 15	1478	Qy
85	CCCAGATCTGGCTGTTGAAGATGATGAGGGGCAGGAACTGTTTACAGAGATAGGAAGAA 12	1226	рь
77	TCCAGATATAGATGTTCAGGATGATGAAGTGGCAGAAACTGTTTTCAGAGATAGGAAGAG 14	1418	Qy
25	CGTGAAAAATAATATGCACATTGAAGAAATACAAGAAGATGAAGGCGAAGACATG	1166	DЬ
17	TGTGGAAAATAATATGCACATTGAGGAAATACAAGAAGATGAAGACAATGACATGGAAGG 14	1358	γo
65	GGATGTGCCTGTGGAGTTTCTGGTGTTGAATGATGTTGAGTTAATCATTTCCCA 11	1112	DЬ
57	AGAAGAGGGAGTTCCAGTGGAATTTTTGGTATTACATGATGTTGATTTAATAATAATATCTCA 13	1298	Qy
111		1112	Дb
97	GTTAAGGGACTCTTTGGAAGTGAACATTCCTCAAGATGCTAATGTGGTCTTCAAAAGAGC 12	1238	Qy
111	1	1112	В
37	TAGAAGAACTGCAGAATGGGTTGCTTGGCGTCTTCTGGGAAAAGCAGGAGTTCTACTCTT 12	1178	Qy
111	1	1112	Db
.77	FUTCCAACTGGGCTTACCACTGGTTTTTATTGTTAGCCAACAGGCTACTTATGAAGCTGA 117	1118	Qy
.111	AATGAACGCACCTCTGTT1	1094	DЬ
.117	AATGAAAGCACCTCTGTTGACTGAAGTTGCTGAAGATCCTCAACAAGTTTCAACTGTCCA 1	1058	Qу
093		1034	DЬ
)57	TAGAAGAACACTAATGGAACAGCCATTGACTACACTGAACATTCACCTGTTTATTAA	998	Оy
)33	GAACATGCACATCTCTATTTTCATTGTAAACTGGTCTTGGACTTGACCGAGCATTG	974	ф
)7	GGAATATGCACATCTCTACTTTTTCATTGTAAACTAGTCTTGGACTTGACCCAGCAAT	938	Qy
73	** ATACCAATTTGTCTTAACCACAGAAATTGCCCTTTTGGAAAGTATTGGCTCTGAGGATGT 93	914	B 2
i i		, (
177	AGCCATTGGAATACCAGAGCACAGAGCAGTCATGGAAGCCGGTTTTGTGTATATGGGACTAC 8	818	P 0
ί3		794	Db
117	CCTTCAGAACATAGAAAATGCTCTGAAAGGAAAAGCAAATATTATATTCTCATATGTAAG 8	758	Qy
33	TGCTCATGTTCTCTTTGCTCTGCTTTTTAATGAAGTAAAATATATTACCACCCTGGAAG	734	ф
57	cecce	698	Qy
33	S GGCARCATALIGCICAGAGAATICCCTACIGACACCTIGITIGATGIGAATIGCCATIGI 69	674	Db Q
í	S ECHERALOCOLER (OLD CHARLE CHEROLOR COLOCUMENT OF CALOCUMENT OF CALOCUM		} {
37	3 AGAAGAAATATCAAGATACTGTGGAAAAGAAAAGGATTTGATGAAAGCATATTTATT	578 614	P 64
13	AGAAGCTGTCAAGCCTCTCCAGGACTATGGGATTTCAGTTGCAAAGGTTACTTGTG	554	Db
17	TGAGGCTGTTAGACCTCTGCAGGACTATGGAATTTCAGTTGCCAAGGTTAATTG	518	Qy
3	ATTAGTTTATTTCTGCCAAGTTGGTTCTCTAAGTAACTCTGTGTTTCTTGAAGAACTAAA 55	494	DЪ

2677	GTGTATGAAAGAAACAGATGTGCAGGAGAAATGATAAGGAAACATGAAGATAAATCGGC	2618	Qy
2395		2336	Db
2617 2335	TGATTTTCTAAGTATGATAGATGCCGCAACATCTCAACGTGGCACTAGGAAAGTTCCCAA	2558 2276	Qу
2557	ACTAGAAAATCATATCACAATTTTACCTGCTCAAGAATGGAAACCTCCTCTTCCAGCTTA	2498	Qy
2275		2216	Db
2497	TTCAGACCAGGCTATAATTGAAGAAAACCTTGTATTGTGGCTGAAGAAATTAGAAGCAGG	2438	Qy
2215		2156	Db
2437	TCCCCTTCCTCTTCTTGTTTTGGTGAATCTGCATTCAGGTGGCCAAGTATTTGCATTTCC	2378	Qy
2155		2096	Db
2377	AAATCTAAAGAATACTCCAGTGGGGAGAGGAATCTTGCGGGCATATTTTGATCCTCTGCC	2318	Qy
2095		2041	Db
2317	AAAAGCAATATTGACACTGGTAAAGCAGAAATACTTGGATTCATTTACTCCATGCTGGTT	2258	Qy
2040		2002	Db
2257	CAGACTTCAGAAACCATTATTGATTTGTTCAGTGATGGCACTGTAAATCCTCAATATAA	2198	Qy
2001		1942	Db
2197 1941	AACAGATGCACTACTGGAAATGTTTCCGGAAATCACTGTGGAAAATCTTCCCAGTTATTT	2138 1886	Фр
2137 1885	AGGCAAAATAGAGAGCATCCCACTAGCTAGCACATGCACAAGACATAGTTCAAATAAT	2078 1826	Qу
2077	GCTACTGTCAACCAAATATGCTGCAAGTCTTCCAGCCCTGCTGCCTGC	2018	Qy
1825		1766	Db
2017	AGCAGGAAACTACCTAAAAGGATATGTTATCACTGGAATTATTCTGAAGAAGATGTTTT	1958	Qy
1765		1706	Db
1957	TGTGTCAGTATTGGGACTATTTAGTCCAACCATGAAAACAGCAAAAGAAGATTTTAGTGA	1898	Qy
1705		1646	Db
1897	CCAAGAAGCAGAAGAATATTTAAGTGGGGAATTATATAAAGACCTCATCTTGTATTCTAG	1838	Qy
1645		1586	Db
1837	AGATCTCCTAAAATTTATCCAGCTCAACAGGATTTCATATCCAGTGAATATAACATCGAT	1778	Qy
1585		1526	Db
1777	CATAAAGATGTACAAGAAAGGCGAGAACCCAGTATCTTATGCTGGAATGTTAGGAACCAA	1718	Qy
1525		1466	Db
1717	AATAAACTGTGCAGATTGGTCTGATGTATGTACTAAGCAAAATGTTACTGAATTTCCTAT	1658	Qy
1465		1406	Db
1657	GCAATCCTATATTGATGTGGCAGTTAAACTGAAAGGCACATCTACTATGCTTCTTACTAG	1598	Qy
1405		1381	Db
1380	GACTTCTGACAGCATAGTGCTCTTCTATGCTACCT	1346	Дb

```
Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ργ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ş
                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 3
US-09-912-293-92043
                                                                                                                                                                                                                                                                                                                                                                                       Sequence 92043, Appl GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                 FILE REFERENCE: PO-100
CURRENT APPLICATION NUMBER: US/09/912,293
CURRENT FILING DATE: 2001-07-26
PRIOR APPLICATION NUMBER: 08/103,744
                                                                                                                              PRIOR
PRIOR
                                                                                                                                                                         PRIOR PRIOR
                                                                                                                                                                                                                 PRIOR PRIOR
                                                                                                                                                                                                                            PRIOR FILING DATE: 1993-08-09
PRIOR APPLICATION NUMBER: 09/249,651
PRIOR FILING DATE: 1999-02-12
PRIOR APPLICATION NUMBER: 08/104,507
PRIOR FILING DATE: 1993-08-09
                                                                                                                                                                                                   PRIOR
                                                                                                                                                                                                                                                                                                                                                         TITLE OF INVENTION: Human Genes, Sequences, and
                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Rosen, et. al.
PRIOR APPLICATION NUMBER: 09/813,155
PRIOR FILING DATE: 2001-03-21
Remaining Prior Application data rem
NUMBER OF SEQ ID NOS: 244538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2862
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2802
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3038
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2978
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2858
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2798
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICATION NUMBER: 08/220,691 FILING DATE: 1994-03-31 APPLICATION NUMBER: 09/741,830
                                                        FILING DATE: 2000-12-22
                                                                                                               FILING DATE: 1994-03-31
                                                                                                                            FILING DATE: 1994-02-15
APPLICATION NUMBER: 08/221,623
                                                                                                                                                       APPLICATION NUMBER: 08/196,362
                                                                                                                                                                      APPLICATION NUMBER: 09/859,490 FILING DATE: 2001-05-18
                                                                                                                                                                                                   FILING DATE: 1994-02-15
                                                                                                                                                                                                                 APPLICATION NUMBER: 08/196,363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TAGAAATTATTAATGAGATATTTTACATCCTTTTTTGTACCAAGTCTTCTAAATGCAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CATATTTTATACTTACTGCATTTCTTACTTCCGAGTAGCCATATTTCAAGTGTTCATTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CAGGGCAAAATAATTTGATATTACTTTTCACCCAGTAGTATACCCAAAATAGCGAAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGACCTGGGTCTAGCCATCCTGTGCATTTGAATCAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TAACTTAGTTCTAGCCATGATTTCTATTTGGATTAAAAT 3256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CACATGTGGCCTGTGACTACTGTATTGGACAGTTCAGTACTAGACAAAAACTAGCATAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        C--ATTTCACACTTAATGCCTTTCCTCACTAAGGAGATCCGTTTTTGAGGGCTTATTTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACTACGAAAATGTTGACAT - - - - - - TTACTTTTTAATGTGAAGTCTTCAAAAATACAGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGCCAGGAGAGAGCCGGTCGAAATGCTGAGAATAAAGCGCTGGAACACTGCCAACTGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAAGAATAATATTAAATCATTTCAAGTTTGCAGACTAGTGCCATCCAATAGAATTATAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGTCAGAAAAGAACCGATTGAAACTCTGAGAATAAAGCATTGGAATAGAAGTAATTGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ----GCGGGCCTCGTGGGATGGCCTCTCTGTGGCACAGGAAACCCGAGATCAAATCTGTA
                                                                                                                                                                                                                                                                                                                                                                                                      Application US/09912293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -----ATAAACCCCAGACAGCTTAATT
              data removed
              See
              File
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2900
                                                                                                                                                                                                                                                                                                                                                         Expression
             Wrapper
                                                                                                                                                                                                                                                                                                                                                           Products
              ٥r
              PALM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3097
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3037
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2612
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2917
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2737
                                                                                                                                                                                                                                                                                                                                                           100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2977
```

```
Qy
                                                                             ; OTHER INFORMATION: n is US-09-912-293-92043
                                           Query Match
Best Local Similarity
                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQ ID NO 92043
                                                                                                                                    NAME/KEY: misc_feature LOCATION: (415)...(415) OTHER INFORMATION: n is
                                                                                                                                                                                  NAME/KEY: misc_feature LOCATION: (412)..(412) OTHER INFORMATION: n is
                                                                                                                                                                                                                              NAME/KEY: misc_feature LOCATION: (402)...(402) OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                           NAME/KEY: misc_feature LOCATION: (400)...(400) other information: n i:
                                                                                                                                                                                                                                                                                                                          NAME/KEY: misc_feature LOCATION: (398)..(398) OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME/KEY: misc_feature
LOCATION: (370)..(370)
OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURE:
NAME/KEY: misc_feature
LOCATION: (360)..(360)
OTHER_INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME/KEY: misc_feature LOCATION: (355)..(355) OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NAME/KEY: misc_feature LOCATION: (352)...(352) OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME/KEY: misc_feature LOCATION: (349)..(349) OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                        LOCATION: (390)..(390)
OTHER INFORMATION: n i
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LOCATION: (328)...(328)
OTHER INFORMATION: n is
FEATURE:
                                                                                                  NAME/KEY: misc_feature LOCATION: (433)...(433)
                                                                                                                                                                          FEATURE
                                                                                                                                                                                                                    FEATURE:
                                                                                                                                                                                                                                                                  FEATURE
                                                                                                                                                                                                                                                                                                                  FEATURE
                                                                                                                                                                                                                                                                                                                                                               FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                NAME/KEY: misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                            FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                    OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                NAME/KEY: misc_feature LOCATION: (387)..(387)
                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME/KEY: misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME/KEY: misc_feature
LOCATION: (320)..(320)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE: DNA
         2716
ATTGGAATAGAAGTAATTGGTTTAAAGAAGCAGAAAAATCATTTAGACGTGATAAAGAGT 2775
                                Conservative
                                                                                                                                                                                                                                                                               is
                                                                                                                                                                                                                                                                                                                             ż
                                                                                                                                                                                                                                                                                                                                                                          is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         is
                                           7.8%;
94.2%;
                                                                                       equal
                                                                                                                                                                                                                                                                                                                                                                        equal
                                                                                                                                      equal
                                                                                                                                                                                   equal
                                                                                                                                                                                                                                                                             equal
                                                                                                                                                                                                                                                                                                                                                                                                                     equal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    equal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           equal
                                                                                                                                                                                                                                equal
                                                                                                                                                                                                                                                                                                                             equal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 equal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               equal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         equal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    equal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   equal
                               0;
                                          Score
Pred.
                                                                                                                                                                                                                                                                               ţ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ţ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    to
                                                                                         to
                                                                                                                                      ťo
                                                                                                                                                                                     ξ
                                                                                                                                                                                                                                ç
                                                                                                                                                                                                                                                                                                                            ť
                                                                                                                                                                                                                                                                                                                                                                        to
                                                                                                                                                                                                                                                                                                                                                                                                                       ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    б
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ţ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ç
                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   a,t,g,
                                                                                       a,t,g,
                                                                                                                                     a,t,g,
                                                                                                                                                                                   a,t,g,
                                                                                                                                                                                                                               a,t,g,
                                                                                                                                                                                                                                                                             a,t,g,
                                                                                                                                                                                                                                                                                                                            a,t,g,
                                                                                                                                                                                                                                                                                                                                                                        a,t,g,
                                                                                                                                                                                                                                                                                                                                                                                                                    a,t,g,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    a,t,g,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               a,t,g,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            a,t,g,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           a,t,g,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    a,t,g,
                                           354.2;
No. 9.9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ğ
                                                                                         ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           or
                                                                                                                                      Or
                                                                                                                                                                                                                                or
C
                                                                                                                                                                                                                                                                             ç
                                                                                                                                                                                                                                                                                                                            or
                                                                                                                                                                                                                                                                                                                                                                        or
                                                                                                                                                                                                                                                                                                                                                                                                                       or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         or
C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ဝူ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     얁
                                           ; DB 6
                                22;
                                                      6;
                                Indels
                                                     Length 435;
                                1;
                               Gaps
```

В

ATTCGGCACGAGGTAATTGGTTTAAAGAAGCAGAAAAATCATTTAGACGTGATAAAGAGT

61

1;

```
; LOCATION: 333
; OTHER INFORMATION:
US-09-513-999C-32911
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δã
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-513-999C-32911
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 32911, Application US/09513999C GENERAL INFORMATION:
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                          SOFTWARE: Patent.pm
SEQ ID NO 32911
LENGTH: 355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE OF INVENTION: Expressed Sequence Tags FILE REFERENCE: 59.US2.REG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Ducter, J.Y.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CURRENT FILING DATE: 2000-02-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRIOR FILING DATE: 1999-02-26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRIOR APPLICATION NUMBER: US 60/122,487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Dumas Milne Edwards, J.B.
                                                                                                                                                                                                                                                                                                                                                                                                                                                 NUMBER OF SEQ ID NOS: 36681
                                                                                                       LOCATION: 326
OTHER INFORMATION:
                                                                                                                                                                                                                                                                    NAME/KEY: misc_feature LOCATION: 16
OTHER_INFORMATION: k-g
                                                                                                                                                                                                                                                                                                                          LOCATION: 15
OTHER INFORMATION: s-g or c
                                                                             NAME/KEY: misc_feature
                                                                                                                                  NAME/KEY: misc_feature
                                                                                                                                                              OTHER INFORMATION: r-a
                                                                                                                                                                        NAME/KEY: misc_feature
                                                                                                                                                    FEATURE
                                                                                                                                                                                                                  OTHER INFORMATION: s-g
                                                                                                                                                                                                                                COCATION:
                                                                                                                                                                                                                                             NAME/KEY: misc_feature
                                                                                                                                                                                                                                                            FEATURE
                                                                                                                                                                                                                                                                                                                 FEATURE
                                                                                                                                                                                                                                                                                                                                                    NAME/KEY: misc_feature
                                                                                                                                                                                                                                                                                                                                                                     FEATURE:
                                                                                                                                                                                                                                                                                                                                                                              ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3016
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2956
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2896
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2776 TAGGATGCTCAAAAGTGAACTAATTTTATAGGGCTGTGGTTTCCAAAATTTTTTTGGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GACCCAGTNTTCTAAATGCCGTACANATNTTATACT 397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TACCAAGTCTTCTAAATGCAGTACATATTTTATACT 3110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTATACCCAAAATAGCGAAATATAGAAATTA-TTAATGAGATATTTTACATCCTTTTTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GATAGACTTAATTTATTTCCTTAAAGAATAATATTAAATCATTTCAAGTTTGCAGACTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTATACCCAAAATAGCGGNATATAGGNATTATTTAATGGGGTATTTTNCANCCNTTTTNG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CATTAAACAAAGTAAAAGTGAGCAGGGCAAAATAATTTTGATATTACTTTTCACCCAGTA 3015
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GATAGACTTAATTTATTTCCTTAAAGAATAATATTAAATCATTTCAAGTTTGCAGACTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TAGGATGCTCAAAAGTGAACTAATTTTATAGGGCTGTGGTTTCCAAAATTTTTTTGGCAT
                                                     w=a
                                                                                                          n-a,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2000-02
 98
                                                                                                                                                                                                                                                                       or
                                                     ď
                                                                                                                                                                                                                   or
                                                                                                         9,
                                                                                                                                                                                                                   O
                                                                                                                                                                                                                                                                         4
                                                                                                          O
                                                                                                          or,
Score
Pred.
341;
No. 5.
DB 6;
.6e-62;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Encoded
           Length 355;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Human Proteins.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3074
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   181
```

```
; NAME/KEY: misc_feature
; LOCATION: (310)...(310)
; OTHER INFORMATION: n is
US-09-912-293-91554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δã
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-912-293-91554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ър
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   20
                                                                                                                                                                                                         Remaining Prior Application data removed - See File Wrapper or PALM.
NUMBER OF SEQ ID NOS: 244538
SEQ ID NO 91554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 91554, Application US/09912293 GENERAL INFORMATION:
   Matches
                 Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                              PRIOR
PRIOR
                                                                                                                                                                                                                                                                                                                                                PRIOR PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRIOR APPLICATION NUMBER: 09/249,651
PRIOR FILING DATE: 1999-02-12
PRIOR APPLICATION NUMBER: 08/104,507
PRIOR FILING DATE: 1993-08-09
PRIOR APPLICATION NUMBER: 08/196,363
PRIOR FILING DATE: 1994-02-15
PRIOR APPLICATION NUMBER: 09/859,490
                                                                                                                                                                                                                                                                                                                                                                                 PRIOR PRIOR
                                                                                                                                                                                                                                                              PRIOR FILING DATE: 2001-03-21
                                                                                                                                                                                                                                                                                                                                                                                                                                   PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CURRENT FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CURRENT APPLICATION NUMBER: US/09/912, 293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE OF INVENTION: Human Genes, Sequences, FILE REFERENCE: PO-100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRIOR EILING DATE: 1993-08-09
                                                                                                                                                                                                                                                                                                                                                                                                                   PRIOR
                                                                                                                                         FEATURE:
                                                                                                                                                        ORGANISM: Homo sapiens
                                                                                                                                                                         TYPE: DNA
                                                                                                                                                                                           LENGTH: 313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2753
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2693
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2513 CACAATTTTACCTGCTCAAGAATGGAAACCTCCTCTTCCAGCTTATGATTTTCTAAGTAT 2572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 CACAATTTTACCTGSKCAAGAATGGAAACCTCCTCTTCCAGCTTATGATTTTCTAAGTAT 60
                                                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER: 08,
                                                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER: 08/196,362 FILING DATE: 1994-02-15 APPLICATION NUMBER: 08/221,623
                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER: 09/859,490 FILING DATE: 2001-05-18
                                                                                                                                                                                                                                                                              APPLICATION NUMBER: 09/813,155
                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER: 09/741,830
                                                                                                                                                                                                                                                                                                                                FILING DATE: 1994-03-31
                                                                                                                                                                                                                                                                                                FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GATTGAAACTCTGAGAATAAAGCATTGGAATAGAAGTAATTGGTTTAAAGAAGCAGAAAA 2752
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGTTTCCAAAATTTTTTTGGCATGRNTAGACTWAATTTATTTCCTTAAAGAATAA 355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGTTTCCAAAATTTTTTTGGCATGA-TAGACTTAATTTATTTCCTTAAAGAATAA 2866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATCATTTAGACGTGATAAAGAGTTAGGATGCTCAAAAGTGAACTAATTTTATAGGGCTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATCATTTAGACGTGATAAAAGAGTTAGGATGCTCAAAAGTGAACTTAATTTTATAGGGCTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GATTGAAACTCTGAGAATAAAGCATTGGAATAGAAGTAATTGGTTTAAAGAAGCAGAAAA
al Similarity
312; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGATGTGCAGGAGAATGATAAGGAACAACATGAAGATAAATCGGCAGTCAGAAAAGAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGATGTGCAGGAGAATGATAAGGAACAACATGAAGATAAATCGGCAGTCAGAAAAGAACC 2692
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   349;
   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         et. al.
                                                                                                                                                                                                                                                                                            2000-12-22
                 6.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2001-07-26
                                                                                    equal to a, t, g,
                                                                                                                                                                                                                                                                                                                                                 08/220,691
 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5
Score 312; DB 6; Pred. No. 6.7e-56; 0; Mismatches 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                      or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       and Expression
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                 Length 313
   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Products
   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1;
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ٠.
```

Qy

1911 GGACTATTTAGTCCAACCATGAAAACAGCAAAAGAAGATTTTAGTGAAGCAGGAAACTAC 1970

```
US-09-912-293-96911
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÕ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENERAL INFORMATION:
                                                                                                                                                                                                     SEQ ID NO 96911
LENGTH: 496
                                                                                                               ORGANISM: Homo sapiens FEATURE: NAME/KEY: misc_feature LOCATION: (10)..(10) OTHER INFORMATION: n is EFEATURE:
                                                                                                                                                                                                                                                                                                                                             PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CURRENT APPLICATION NUMBER: US/09/912, 293 CURRENT FILING DATE: 2001-07-26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FILE REFERENCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Rosen,
                                                                                                                                                                                                                               Remaining Prior Applic
NUMBER OF SEQ ID NOS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRIOR
                                                                                                                                                                                                                                                        PRIOR APPLICATION NUMBER: 09/813,155 PRIOR FILING DATE: 2001-03-21
                                                                                                                                                                                                                                                                                                                                                                         PRIOR
                                                                                                                                                                                                                                                                                                                       PRIOR
                       NAME/KEY: misc_feature LOCATION: (184)...(184) OTHER INFORMATION: n is
                                                                          NAME/KEY: misc_feature
LOCATION: (160)...(160)
OTHER INFORMATION: n is
                                                                                                                                                                                             TYPE: DNA
                                                                FEATURE:
 NAME/KEY: misc_feature
               FEATURE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2091
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1971
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Н
                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: 08/220,691
                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: 08/196,362 FILING DATE: 1994-02-15 APPLICATION NUMBER: 08/221,623
                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: 08/196,363
FILING DATE: 1994-02-15
APPLICATION NUMBER: 09/859,490
                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: 09/249,651 FILING DATE: 1999-02-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: 08/103,744 FILING DATE: 1993-08-09
                                                                                                                                                                                                                                                                                APPLICATION NUMBER: 09/741,830 FILING DATE: 2000-12-22
                                                                                                                                                                                                                                                                                                         FILING DATE: 1994-03-3
                                                                                                                                                                                                                                                                                                                                                                                     FILING DATE: 2001-05-18
                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: 08/104,507 FILING DATE: 1993-08-09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGCATCCCACTAGCTAGCACACATGCACAAGACATAGTTCAAATAATAACAGATGCACTA 2150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTAAAAGGATATGTTATCACTGGAATTTATTCTGAAGAAGATGTTTTGCTACTGTCAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCATTATTGNTTT 313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCATTATTGATTT 2223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTAAAAGGATATGTTATCACTGGAATTTATTCTGAAGAAGATGTTTTGCTACTGTCAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGCATCCCACTAGCTAGCACACATGCACAAGACATAGTTCAAATAATAACAGATGCACTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Application US/09912293
                                                                                                                                                                                                                                           Application data removed -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             et.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Human Genes, Sequences,
                                                                                                                                                                                                                               244538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2001-07-26
                          equal
                                                                           equal
                                                                                                                             equal
                                                                           ő
                                                                                                                             ţ
                          to a, t, g,
                                                                                                                             a,t,
                                                                           a,t,g,
                           or
                                                                           or
                                                                                                                             or
                                                                                                                                                                                                                                          See File Wrapper
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                and
                                                                                                                             a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Expression Products 100
                                                                                                                                                                                                                                            or PALM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      60
                                                                                                                                                                                       NAME/KEY: misc_feature LOCATION: (439)...(439) OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURE:
NAME/KEY: misc_feature
LOCATION: (404)..(404)
OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME/KEY: misc_feature LOCATION: (347)..(347) OTHER INFORMATION: n is
                                    NAME/KEY: misc_feature LOCATION: (472)...(472) OTHER INFORMATION: n is
                                                                                     NAME/KEY: misc_feature
LOCATION: (445)..(445)
OTHER INFORMATION: n is
                                                                                                                                      NAME/KEY: misc_feature LOCATION: (443)...(443) OTHER INFORMATION: n is
                                                                                                                                                                                                                                        NAME/KEY: misc_feature
LOCATION: (426)..(426)
OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                         NAME/KEY: misc_feature
LOCATION: (420)..(420)
OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                           NAME/KEY: misc_feature
LOCATION: (411)..(411)
OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                           FEATURE:
NAME/KEY: misc_feature
LOCATION: (407)..(407)
OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME/KEY: misc_feature LOCATION: (367)...(367) OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME/KEY: misc_feature LOCATION: (353)...(353) OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME/KEY: misc_feature
LOCATION: (287)...(287)
OTHER_INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURE:
NAME/KEY: misc_feature
LOCATION: (285)..(285)
OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME/KEY: misc_feature
LOCATION: (238)..(238)
OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME/KEY: misc_feature LOCATION: (232).:(232) OTHER_INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LOCATION: (214)..(214) OTHER INFORMATION: n 1
NAME/KEY: misc_feature LOCATION: (481)..(481)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME/KEY: misc_feature LOCATION: (332)..(333) OTHER INFORMATION: n is
                          FEATURE:
                                                                         FEATURE:
                                                                                                                            FEATURE:
                                                                                                                                                                               FEATURE
                                                                                                                                                                                                                                 FEATURE
                                                                                                                                                                                                                                                                                 FEATURE:
                                                                                                                                                                                                                                                                                                                                   FEATURE
                                                                                                                                                                                                                                                                                                                                                                                     FEATURE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      is
                                    equal
                                                                                                                                         equal
                                                                                                                                                                                                                                                                                                                                             equal
                                                                                                                                                                                                                                                                                                                                                                                                                                               equal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 equal
                                                                                         egual
                                                                                                                                                                                           equal
                                                                                                                                                                                                                                           equal
                                                                                                                                                                                                                                                                                             equal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               equal to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                equal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 equal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   equal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    equal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    equal
                                                                                                                                                                                                                                                                                                                                                                                              equal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   equal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      equal
                                       6
                                                                                         ţ
                                                                                                                                        ç
                                                                                                                                                                                           ţ
                                                                                                                                                                                                                                           б
                                                                                                                                                                                                                                                                                             ç
                                                                                                                                                                                                                                                                                                                                             ő
                                                                                                                                                                                                                                                                                                                                                                                              ç
                                                                                                                                                                                                                                                                                                                                                                                                                                               6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ţ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ţ
                                                                                                                                                                                           a,t,
                                                                                                                                                                                                                                           a,t,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                a,t,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      a,t,
                                     a,t,g,
                                                                                      a,t,g,
                                                                                                                                        a,t,g,
                                                                                                                                                                                                                                                                                            a,t,g,
                                                                                                                                                                                                                                                                                                                                            a,t,g,
                                                                                                                                                                                                                                                                                                                                                                                            a,t,g,
                                                                                                                                                                                                                                                                                                                                                                                                                                              a,t,g,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               a,t,g,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               a,t,g,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                a,t,g,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a,t,g,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a,t,g,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a,t,g,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    a,t,g,
                                                                                                                                                                                           ģ
                                                                                                                                                                                                                                           ģ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               , g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ģ
                                       ç
                                                                                         or
                                                                                                                                         or,
                                                                                                                                                                                           ^{\rm or}
                                                                                                                                                                                                                                           or
                                                                                                                                                                                                                                                                                             or,
                                                                                                                                                                                                                                                                                                                                             or
                                                                                                                                                                                                                                                                                                                                                                                                                                               유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ٥ŗ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      or,
                                                                                                                                                                                                                                           O
                                                                                                                                                                                                                                                                                             C
                                                                                                                                                                                                                                                                                                                                             C
                                                                                                                                                                                                                                                                                                                                                                                              C
                                                                                                                                                                                                                                                                                                                                                                                                                                               a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a
```

```
CURRENT APPLICATION NUMBER: US/10/349,781
CURRENT FILING DATE: 2003-01-21
PRIOR APPLICATION NUMBER: 09/540,764
PRIOR FILING DATE: 2000-03-30
PRIOR PPLICATION NUMBER: 08/992,868
PRIOR APPLICATION NUMBER: 08/932,838
PRIOR APPLICATION NUMBER: 60/032,838
PRIOR APPLICATION NUMBER: 08/734,050
PRIOR APPLICATION NUMBER: 08/734,050
PRIOR FILING DATE: 1996-10-18
PRIOR PILING DATE: 1996-10-18
PRIOR APPLICATION NUMBER: 60/006,111
PRIOR FILING DATE: 1995-10-24
PRIOR FILING DATE: 1995-10-24
PRIOR APPLICATION NUMBER: 08/733,814
PRIOR APPLICATION NUMBER: 08/733,814
PRIOR APPLICATION NUMBER: 08/733,814
PRIOR APPLICATION NUMBER: 09/705,864
PRIOR FILING DATE: 1995-10-26
PRIOR APPLICATION NUMBER: 09/763,920
PRIOR APPLICATION NUMBER: 09/763,920
                                                                                                                                                                                                                                                                                                                                              US-10-349-781-15516; Sequence 15516, Application US/10349781; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    д
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    뭥
                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; OTHER INFORMATION: n
US-09-912-293-96911
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                            APPLICANT: Seilhamer, Jeffrey J.; Delegeane, Angelo APPLICANT: Stuart, Susan G.; Stuve, Laura L. APPLICANT: Mullahly, Sara J.; Naughton, Rebecca E. TITLE OF INVENTION: POLYNUCLEOTIDES OF CELLS AND TIS FILE REFERENCE: PD-1028-2 CON
                                                                                                                                                                                                                                                                                                                                                                                                                                                               3987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3867
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3754
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local
APPLICATION NUMBER: 08/763,920 FILING DATE: 1996-12-11 APPLICATION NUMBER: 60/008,794 FILING DATE: 1995-12-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCTTGCAAGCTTCAGACAATCAGTTGATCTCCCTGAGCCACACGGCCTCATTCTGTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGAGGGAAAGATTAGCCAAAGAGTTAATTTTCATTCCAAATCACTTAGCTGTTAGACTGA 3986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTGCCCATCTCCTCATGGGNNAGAGAGGGTCCCTNATCTGNAGGGTCTCTGGAANTCTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCTGCCATCTCCTCAT-GGAAAGAGAGGCTCCCTCATCTGAAGCGTCTCT-GAAATCTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTCTTATTTCTACAAGTTATATGGCTAAATTTCAGA---TTGAACAGGGATTCAGC--AT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGATTATTACCT-GGATACAACTTGATCTTTTCT-AATATTTTCAGAAAGTGATGGGATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGAGGGGNAAGNTNGCCCAAGGGTTAATTTTCATTCCCAANCACTTGGGNGTTAGACCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTCTTATTTCTACAAGTTATATGGGCTAAAATNTNAGATTGGAACAGGGGTTCAGCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGATTATTACCTGGGATACAACTTGATNTTTTCTGAATATTTTCAGAAGTGNATGGGATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         al Similarity
406; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                               3991
                                                                                                                                                                                                                                                                                                                                                                                                                                       496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             įs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            equal to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 265.8;
Pred. No. 3.6e
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             a,t,g,
                                                                                                                                                                                                                                                                                    ura L.
Rebecca E.
AND TISSUES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ဝူ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         B; DB 6;
B.6e-46;
nes 64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             O
                                                                                                                                                                                                                                                                                                                                       z
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                            OF
                                                                                                                                                                                                                                                                                             THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         15;
                                                                                                                                                                                                                                                                                             FEMALE REPRODUCTIVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3808
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3753
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                            PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61
```

```
RESULT 8
US-10-349-781-36747
US-10-349-781-36747, Application US/10349781
; GENERAL INFORMATION:
Toffrou I help
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; OTHER INFORMATION: Incyte ID US-10-349-781-15516
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRIOR APPLICATION NUMBER: 08/77
PRIOR FILING DATE: 1996-12-23
Remaining Prior Application dat
NUMBER OF SEQ ID NOS: 61458
SOFTWARE: PERL Program
SEQ ID NO 15516
LENGTH: 257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Seilhamer, Jeffrey J.; Delegeane, APPLICANT: Stuart, Susan G.; Stuve, Laura L. APPLICANT: Mullahy, Sara J.; Naughton, Rebertifle OF INVENTION: POLYNUCLEOTIDES OF CELLS FILE REFERENCE: PD-1028-2 CON
                                                                                                                                                                                                                                                                                               PRIOR APPLICATION NUMBER: 08/992,868
PRIOR FILING DATE: 1997-12-11
PRIOR APPLICATION NUMBER: 60/032,838
PRIOR FILING DATE: 1996-12-13
PRIOR APPLICATION NUMBER: 08/734,050
                                                                                                                                                                                                                                                                                                                                                                                                 CURRENT APPLICATION NUMBER: US/10/349,781
CURRENT FILING DATE: 2003-01-21
PRIOR APPLICATION NUMBER: 09/540,764
PRIOR FILING DATE: 2000-03-30
PRIOR FILING DATE: 2000-03-30
                                     PRIOR APPLICATION NUMBER: 60/008,794
PRIOR FILING DATE: 1995-12-14
PRIOR APPLICATION NUMBER: 08/772,783
PRIOR FILING DATE: 1996-12-23
Remaining Prior Application data NUMBER OF SEQ ID NOS: 61458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: DNA
ORGANISM: Homo sapiens
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME/KEY: misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3845 CTGAAGCGTCTCTGAAATCTACCCTTGCAAGCTTCAGACAAATCAGTTGATCTCCCTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local Similarity
nes 257; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 CTGAAGCGTCTCTGAAATCTACCCTTGCAAGCTTCAGACAATCAGTTGATCTCCCTGAG
                                                                                                                                                                                                                                         FILING DATE: 1996-10-18
APPLICATION NUMBER: 60/006,111
FILING DATE: 1995-10-24
                                                                                                                  APPLICATION NUMBER: 60/005,864
FILING DATE: 1995-10-26
APPLICATION NUMBER: 08/763,920
FILING DATE: 1996-12-11
                                                                                                                                                                                                 APPLICATION NUMBER: 08/733,814 FILING DATE: 1996-10-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCACACGGCCTCATTCTGTGAGGGAGGGAAAGATTAGCCAAAGAGTTAATTTTCATTCCA 3964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TAATATCTACTTGATAT 4101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCATTTTTTGAGACATTTGTTGAGAATATTCTATTTGGTGCTCTACTGTATTTTTCTTTT 4084
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TAATATCTACTTGATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCATTTTTTGAGACATTTGTTGAGAATATTCTATTTGGTGCTCTACTGTATTTTTCTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5.7%; Score 257; I
ilarity 100.0%; Pred. No. 2
Conservative 0; Mismatche
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      08/772,783
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              data
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               No: hu00067190
                      removed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   removed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ura L.
, Rebecca E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CELLS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                See
                      See
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .2e-44;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Angelo
                      File
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                File
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length
                      Wrapper or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Wrapper or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          읁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                      PALM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEMALE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0,
```

0;

```
Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; NAME/KEY: misc_feature
; OTHER INFORMATION: Incyte
US-10-349-781-36747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-10-349-781-24291
                SEQ ID NO 24291
LENGTH: 228
TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 24291, Appl GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Local Similarity Matches 245; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CURRENT APPLICATION NUMBER: US/10/349,781
CURRENT FILLING DATE: 2003-01-21
PRIOR APPLICATION NUMBER: 09/540,764
PRIOR FILING DATE: 2000-03-30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Seilhamer, Jeffrey J.; Delegeane, Angelo M. APPLICANT: Stuart, Susan G.: Stuve, Laura L. APPLICANT: Mullahy, Sara J.: Naughton, Rebecca E. TITLE OF INVENTION: POLYNUCLEOTIDES OF CELLS AND TISSUES FILE REFERENCE: PD-1028-2 CON
                                                                          Remaining Prior Application data removed - NUMBER OF SEQ ID NOS: 61458 SOFTWARE: PERL Program
                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRIOR APPLICATION NUMBER: 08/992,868 PRIOR FILING DATE: 1997-12-11
                                                                                                                                        PRIOR FILING DATE: 1996-12-23
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: DNA
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3965 AATCACTTAGCIGTTAGACTGATCTGTTIGTAGCAGTTGTTTGTCTCTATTTTTGCTCTGT 4024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3905 CCACACGGCCTCATTCTGTGAGGGAGGGGAAAGATTAGCCAAAGAGTTAATTTTCATTCCA 3964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3845 CTGAAGCGTCTCTGAAATCTACCCCTTGCAAGCTTCAGACAAATCAGTTGATCTCCCCTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ID NO 36747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          241 TAATA 245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 CTGAAGCGTCTCTGAAATCTACCCTTGCAAGCTTCAGACAAATCAGTTGATCTCCCTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: 60/032,838 FILING DATE: 1996-12-13
                                                                                                                                                           APPLICATION NUMBER: 08/772,783
                                                                                                                                                                                APPLICATION NUMBER: 60/008,794 FILING DATE: 1995-12-14
                                                                                                                                                                                                                       FILING DATE: 1996-12-11
                                                                                                                                                                                                                                          APPLICATION NUMBER:
                                                                                                                                                                                                                                                            APPLICATION NUMBER: 60/005,864 FILING DATE: 1995-10-26
                                                                                                                                                                                                                                                                                                 FILING DATE: 1996-10-18
                                                                                                                                                                                                                                                                                                                  FILING DATE: 1995-10-24
APPLICATION NUMBER: 08/733,814
                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: 60/006,111
                                                                                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER: 08/734,050 FILING DATE: 1996-10-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TAATA 4089
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCATTTTTTGAGACATTTGTTGAGAATATTCTATTTGGTGCTCTACTGTATTTTTCTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCACACGGCCTCATTCTGTGAGGGGAGGGAAAGATTAGCCAAAGAGTTAATTTTCATTCCA 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCATTTTTTGAGACATTTGTTGAGAATATTCTATTTGGTGCTCTACTGTATTTTTCTTTT 4084
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5.4%;
ilarity 100.0%;
Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Application US/10349781
                                                                                                                                                                                                                                          08/763,920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ID No: hu00936261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 245; DB 8;
Pred. No. 7.3e-42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                   See
                                                                                                               File Wrapper or PALM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 245;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEMALE REPRODUCTIVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 10
US-09-912-293-18131; April 18131; 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; NAME/KEY: misc_feature
; OTHER INFORMATION: Incyte ID No: hu00693953
US-10-349-781-24291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Remaining Prior Application on NUMBER OF SEQ ID NOS: 244538 SEQ ID NO 18131 LENGTH: 375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRIOR APPLICATION NUMBER: 09/741,830
PRIOR FILING DATE: 2000-12-2
PRIOR APPLICATION NUMBER: 09/813,155
PRIOR FILING DATE: 2001-03-21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRIOR FILING DATE: 1994-03-31
PRIOR APPLICATION NUMBER: 08/220,691
PRIOR FILING DATE: 1994-03-31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRIOR APPLICATION NUMBER: 09/249,651
PRIOR FILING DATE: 1999-02-12
PRIOR APPLICATION NUMBER: 08/104,507
PRIOR FILING DATE: 1993-08-09
PRIOR APPLICATION NUMBER: 08/196,363
PRIOR APPLICATION NUMBER: 08/196,363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CURRENT APPLICATION NUMBER: US/09/912,293
CURRENT FILING DATE: 2001-07-26
PRIOR APPLICATION NUMBER: 08/103,744
PRIOR FILING DATE: 1993-08-09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE OF INVENTION: Human Genes, Sequences, FILE REFERENCE: PO-100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR FILING DATE: 1994-02-15 PRIOR APPLICATION NUMBER: 09/859,490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Rosen,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRIOR FILING DATE: 2001-05-18
PRIOR APPLICATION NUMBER: 08/196,362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR APPLICATION NUMBER: 08/221,623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRIOR FILING DATE: 1994-02-15
NAME/KEY: misc_feature LOCATION: (223)...(223) OTHER INFORMATION: n is
                                                                                                                                              NAME/KEY: misc_feature LOCATION: (201)..(201) OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                            NAME/KEY: misc_feature
LOCATION: (172)...(172)
COTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURE:
                                                                                                                                                                                                                                                                         FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3847
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3727
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3667 CTTTTCTAATATTTTCAGAAAGTGATGGGATAACCCCTAGAAGAGGGACTCAGAATGATATT 3726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181 GAAGCGTCTCTGAAATCTACCCTTGCAAGCTTCAGACAAATCAGTTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ۳
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAAGCGTCTCTGAAATCTACCCTTGCAAGCTTCAGACAAATCAGTTGA 3894
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGATTGAACAGGGATTCAGCATTCTGCCATCTCCTCATGGAAAGAGAGGCTCCCTCATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TATATTTTAAGTGAGTCTTAAAACCTCCTCTTATTTCTACAAGTTATATGGCTAAATTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TATATTTTAAGTGAGTCTTAAAACCTCCTCTTATTTCTACAAGTTATATGGCTAAATTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTTTTCTAATATTTTCAGAAAGTGATGGGATAACCCTAGAAGAGGACTCAGAATGATATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 228;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Application US/09912293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              et. al.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5.0%;
       ıs
                                                                                                                                                         is
       equal
                                                                                                                                                     equal
                                                                                                                                                                                                                                                                                                        equal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       data
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 228; DB 8;
Pred. No. 2.6e-38;
   to a, t, g,
                                                                                                                                                     ťo
                                                                                                                                                                                                                                                                                                    to a, t, g,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   removed - See File Wrapper or PALM
                                                                                                                                                     d,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                and Expression Products
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3846
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               60
```

FEATURE:

```
RESULT 11
US-09-539-806B-30366
; Sequence 30366, Application US/09539806B
; GENERAL INFORMATION:
; APPLICANT: Seilhamer, Jeffrey J.
; APPLICANT: Delegeane, Angelo M.
                                                                                                                                                                                                                    밁
                                                                                                                                                                                        Q
                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                    B
                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                                                                                       ; OTHER INFORMATION: n is US-09-912-293-18131
                        APPLICANT: 1
APPLICANT: 1
APPLICANT: 1
APPLICANT: 1
                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
APPLICANT: Naughton, Rebecca E. TITLE OF INVENTION: POLYNUCLEOTIDES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME/KEY: misc_feature LOCATION: (339)...(339) OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME/KEY: misc_feature
LOCATION: (275)...(275)
OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME/KEY: misc_feature LOCATION: (242)...(242) OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME/KEY: misc_feature
LOCATION: (239)..(239)
OTHER_INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME/KEY: misc_feature LOCATION: (327)...(327) OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME/KEY: misc_feature LOCATION: (306)..(306) OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NAME/KEY: misc_feature
LOCATION: (304)..(304)
OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME/KEY: misc_feature LOCATION: (267)...(267) OTHER INFORMATION: n is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME/KEY: misc_feature LOCATION: (236)..(236) OTHER INFORMATION: n i
                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME/KEY: misc_feature LOCATION: (370)..(370)
                                                                                                                                                                  188
                                                                                                                                                                                          955
                                                                                                                                                                                                                    128
                                                                                                                                                                                                                                             897
                                                                                                                                                                                                                                                                                             837
                                                                                                                                                                                                                                                                                                                                              777
                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                      œ
                                                                                                                                                                                                                                                                  ACTTTTTCATTGNAAACTAGTCTTGGGACTTGGANCCAGCAATGTAGNAGNAANC
                                                                                                                                                                               ACTTTTTTCATTGTAAACTAGTCTTGG--ACTTGACCCAGCAATGTAGAAGAACAC
                                                                                                                                                                                                                                ACAGAAATTGCCCTTTTGGAAAGTATTGGCTCTGAGGATGTGG--AATATGCACATCTCT
                                                                                                                                                                                                                                                                                                                                  GCTCTGAAAGGAAAAGCAAATATTATATTCTCATATGTAAGAGCCATTGGAATACCAGAG 836
                                                                                                                                                                                                                   ACAGAAATTGCCCCTTTTGGAAAGTATTGGCTCTGAGGATGTGGGAATATGGCACATCTCT
                                                                                                                                                                                                                                                                                                                    GCTCTGAAAGGAAAAGCAAATATTATATTCTCATATGTAAGAGCCATTGGAATACCAGAG
                        Stuart, Susan G.
Stuve, Laura L.
Mullahy, Sara J.
                                                 Delegeane, Angelo
Stuart, Susan G.
                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     is
                                                                                                                                                                                                                                                                                                                                                                                 4.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      equal
                                                                                                                                                                                                                                                                                                                                                                                                                                  equal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     equal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        equal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   equal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     equal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      equal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        equal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         equal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       equal
                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                   ţ
                                                                                                                                                                                                                                                                                                                                                                                 Score 188.6; DB 6; Pred. No. 5.3e-30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    б
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ť
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ţ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ţ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ç
                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   a,t,
                                                                                                                                                                                                                                                                                                                                                                                                                                  a,t,g,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     a,t,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       a,t,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       a,t,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a,t,g,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    a,t,g,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       a,t,g,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        a,t,g,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      a,t,
 ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ģ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ģ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ģ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ģ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ģ
 EXOCRINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         a
                                                                                                                                                                                                                                                                                                                                                                       14;
 GLAND
                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                            Length
                                                                                                                                                                                                                                                                                                                                                                                              375;
                                                                                                                                                                                                                                                                                                                                                                       4;
                                                                                                                                                                 243
                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                            954
                                                                                                                                                                                                                                                                                            896
                                                                                                                                                                                                                    187
                                                                                                                                                                                                                                                                   127
                                                                                                                                                                                                                                                                                                                     67
                                                                                                                                                                                                                                                                                                                                                                       2
```

```
Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                               us-10-349-781-1729
                                                                                                                                                                                                                                                                                                   RESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; OTHER INFORMATION: Incyte US-09-539-806B-30366
                                                                                                                                                                                                                                          Sequence 1729, Application US/10349781 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches 181;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOFTWARE: PERL Program SEQ ID NO 30366
                                                                                                          APPLICANT: Seilhamer, Jeffrey J.; Delegeane, APPLICANT: Stuart, Susan G.; Stuve, Laura L. APPLICANT: Mullahy, Sara J.; Naughton, Rebec TITLE OF INVENTION: POLYNUCLEOTIDES OF CELLS FILE REFERENCE: PD-1028-2 COMBER: US/10/349,781 CURRENT FILING DATE: 2003-01-21
                                 PRIOR APPLICATION NUMBER: 09/540,764
PRIOR FILING DATE: 2000-03-30
PRIOR APPLICATION NUMBER: 08/992,868
PRIOR FILING DATE: 1997-12-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRIOR APPLICATION NUMBER: 60/016.
PRIOR FILING DATE: April 18, 1996
Remaining Prior Application data
NUMBER OF SEQ ID NOS: 48372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRIOR PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRIOR
PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR FILLING LOATE: NUMBER: 60/004,676
PRIOR APPLICATION NUMBER: 60/004,676
PRIOR FILING DATE: October 2, 1995
PRIOR APPLICATION NUMBER: 08/749,515
PRIOR APPLICATION NUMBER: 15, 1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FILE REFERENCE: PD-1027 CIP CURRENT APPLICATION NUMBER: CURRENT FILING DATE: 2000-0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRIOR APPLICATION NUMBER: 08/706,766 PRIOR FILING DATE: September 27, 1996 PRIOR APPLICATION NUMBER: 60/004,676
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRIOR FILING DATE: November PRIOR APPLICATION NUMBER: 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM: Homo sapiens FEATURE: NAME/KEY: misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2816
                                                                                                                                                                                                                                                                                                                                                                                                2936 т
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2876
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2756 ATTTAGACGTGATAAAGAGTTAGGATGCTCAAAAGTGAACTAATTTTATAGGGCTGTGGT
                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                     121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DR FILING DATE: October 1, 1997

BR APPLICATION NUMBER: 60/027,249

DR FILING DATE: October 1, 1996

DR APPLICATION NUMBER: 08/826,438

DR FILING DATE: March 20, 1997

DR APPLICATION NUMBER: 60/016,145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     \vdash
APPLICATION NUMBER: 60/
FILING DATE: 1996-12-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: 60/006,810 FILING DATE: November 15, 1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: 60/013,696
FILING DATE: March 20, 1996
APPLICATION NUMBER: 08/951,197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: 08/822,285 FILING DATE: March 20, 1997
                                                                                                                                                                                                                                                                                                                                                           Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATTTCAAGTTTGCAGACTAGTGCCATCCAATAGAATTATAATATAAGTCACATATTTTAT 2935
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTCCAAAATTTTTTTGGCATGATAGACTTAATTTATTTCCTTAAAGAATAATATTTAAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTCCAAAATTTTTTTGGCATGATAGACTTAATTTATTTCCTTAAAGAATAATATTAAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATTTAGACGTGATAAAGAGTTAGGATGCTCAAAAGTGAACTAATTTTATAGGGCTGTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                     ATTTCAAGTTTGCAGACTAGTGCCATCCAATAGAATTATAATATAAGTCACATATTTAT
                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 181
                                                                                                                                                                                                                                                                                                                                                                                                2936
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            100.08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2000-03
               60/032,838
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ī
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US/09/539,806B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        No:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pred. No. 1.86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       removed - See File Wrapper
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        hu00862945
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     рв 5;
1.8e-28;
0;
                                                                                                                                                                     AND
                                                                                                                                                                                                                         Angelo
                                                                                                                                                                   TISSUES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 181;
                                                                                                                                                                                                                         ×
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                     OF.
                                                                                                                                                                     THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PALM
                                                                                                                                                                     FEMALE REPRODUCTIV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2815
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
```

```
US-10-349-781-23200; Sequence 23200, Appl; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; NAME/KEY: misc_feature
; OTHER INFORMATION: Incyte
US-10-349-781-1729
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
PRIOR APPLICATION NUMBER: 09/540,764
PRIOR FILLING DATE: 2000-03-30
PRIOR APPLICATION NUMBER: 08/992,868
PRIOR FILLING DATE: 1997-12-11
PRIOR APPLICATION NUMBER: 60/032,838
PRIOR FILLING DATE: 1996-12-13
PRIOR APPLICATION NUMBER: 08/734,050
PRIOR FILLING DATE: 1996-10-18
PRIOR PRILING DATE: 1996-10-24
PRIOR APPLICATION NUMBER: 60/006,111
PRIOR FILLING DATE: 1995-10-24
PRIOR APPLICATION NUMBER: 08/733,814
PRIOR APPLICATION NUMBER: 60/005,864
PRIOR APPLICATION NUMBER: 60/005,864
PRIOR FILLING DATE: 1995-10-26
PRIOR FILLING DATE: 1995-10-26
PRIOR FILLING DATE: 1995-10-26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQ ID NO 1729
                                                                                                                                                                                                                                                                                                                                                              APPLICANT: Seilhamer, Jeffrey J.; Delegeane, Angelo APPLICANT: Stuart, Susan G.; Stuve, Laura L. APPLICANT: Mullahy, Sara J.; Naughton, Rebecca E. TITLE OF INVENTION: POLYNUCLECTIDES OF CELLS AND TIS FILE REFERENCE: PD-1028-2 CON
                                                                                                                                                                                                                                                                                                                    CURRENT APPLICATION NUMBER: US/10/349,781 CURRENT FILING DATE: 2003-01-21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Remaining Prior Application data removed - See File Wrapper or PALM. NUMBER OF SEQ ID NOS: 61458 SOFTWARE: PERL Program
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRIOR FILING DATE: 1995-12-14
PRIOR APPLICATION NUMBER: 08/772,783
PRIOR FILING DATE: 1996-12-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: DNA
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      715
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           655 GAGAATTCCCTACTGACACCTTGTTTGATGTGAATGCCATTGTCGCCCATGTTCTCTTTG 714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DR APPLICATION NUMBER: 08/733,814
DR FILING DATE: 1996-10-18
DR APPLICATION NUMBER: 60/005,864
DR FILING DATE: 1995-10-26
DR FILING DATE: 1996-12-11
DR FILING DATE: 1996-12-11
DR FILING DATE: 1996-12-11
DR FILING DATE: 1996-12-11
DR APPLICATION NUMBER: 60/008,794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER: 60/006,111 FILING DATE: 1995-10-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: 08/734,050 FILING DATE: 1996-10-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAGCACAGAGC 844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTCTTCTTTTTAGTGAAGTGAAATATATTACCAACCTGGAAGACCTTCAGAACATAGAAA 774
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAGCACAGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATGCTCTGAAAGGAAAAGCAAATATTATATTCTCATATGTAAGAGCCATTGGAATACCCA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATGCTCTGAAAGGAAAAGCAAATATTATATTCTCATATGTAAGAGCCATTGGAATA-CCA 833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            190;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Application US/10349781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Program
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ID No: hu00876731
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 179; DB 8; Pred. No. 4.9e-28; 0; Mismatches 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                       TISSUES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 191;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                       OF THE FEMALE REPRODUCTIVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ۲.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
```

```
; NAME/KEY: misc_feature
; LCCATION: (1)...(1043426)
; OTHER INFORMATION: n - A,T,C or G
US-09-947-911-240
                   δÃ
                                                        В
                                                                                         δÃ
                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                RESULT 14
US-09-947-911-240/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; OTHER INFORMATION: US-10-349-781-23200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 240, Application US/09947911
GENERAL INFORMATION:
APPLICANT: VENTER, J. Craig
TITLE OF INVENTION: COLLECTION OF SINGLE NUCLEOTIDE POLYMORPHISM (SNPs) LOCATED TITLE OF INVENTION: X, METHODS OF DETECTION, AND USES THEREOF FILE REFERENCE: CL001300
                                                                                                                                                                                                                                                                                                                                                                                                                  SEQ ID NO 240
LENGTH: 1043426
                                                                                                                                                                                                         Query Match 2.4%;
Best Local Similarity 60.0%;
Matches 253; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQ ID NO 23200
LENGTH: 176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best Local Similarity Matches 171; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                      847450 TAAAAACATGGTATAGCTTTTAAATGATTTGGAATGGTGCTATTTAATAGAAATATATTA 847391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CURRENT APPLICATION NUMBER: US/09/947,911 CURRENT FILING DATE: 2001-09-07
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRIOR FILING DATE: 1996-12-11
PRIOR APPLICATION NUMBER: 60/
PRIOR FILING DATE: 1995-12-14
PRIOR APPLICATION NUMBER: 08/
PRIOR FILING DATE: 1996-12-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                     CURRENT FILING DATE: 2001-09-07
NUMBER OF SEQ ID NOS: 368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Remaining Prior Application data removed - See File Wrapper or PALM. NUMBER OF SEQ ID NOS: 61458
SOFTWARE: PERL Program
                                                                                                                                                                                                                                                                                                                                                             FEATURE:
                                                                                                                                                                                                                                                                                                                                                                              ORGANISM: HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME/KEY: misc_feature OTHER INFORMATION: Inc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME/KEY: unsure LOCATION: 137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURE:
                                                                                                                                                                     3650 CCTGGATACAACTTGATCTTTTCTAATATTTTTCAGAAAGTGATGGGATAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3590 ATGTTTGAAAAAATTTTGGCTATTAAAGATATGTATTAGATGGTCTTATCCTGATTATTA 3649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3530 TGTTAAAAGTAACCTGTGGCAGACTAGGTTTCCAGAATTTCCTGGTTCTGCTCACGTATC 3589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     121 CCTGGATACAACTTGANCTTTTCTAATATTTTCAGAAAGTGATGGGATAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 TGTTAAAAGTAACCTGTGGCAGACTAGGTTTCCAGAATTTCCTGGTTCTGCTCACGTATC
TAAGTCACATATTTTAATTTAAAATTTTCTAGTAACTACATTAAACAAAGGTAAAAGTGAGC 2978
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATGTTTGAAAAATTTTGGCTATTAAAGATATGTATTAGATGGTCTTATCCTGATTATTA 120
                                                                            AAGAATAATATAAATCATTTCAAGTTTGCAGACTAGTGCCATCCAATAGAATTATAATA 2918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               a,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Incyte ID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ĺ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                08/772,783
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    60/008,794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             á
                                                                                                                                                                                                         Score 108.4; DB 5;
Pred. No. 1:4e-12;
0; Mismatches 161;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     No: hu00313647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 171; DB Pred. No. 2.3e 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               or
S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               other
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .3e-26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 176
                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                              Length 1043426;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                           8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0,
                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         60
                                                                                                                                                                                                           4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
```

õ

```
Ъ
                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 15
US-09-949-002-578
Sequence 578, Application US/09949002
GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: VENTER, J. Craig et al.
APPLICANT: VENTER, J. Craig et al.
TITLE OF INVENTION: WITH INFLAMMATORY AUTOIMMUNE DISEASE, METHODS OF DETECTION
TITLE OF INVENTION: AND USES THEREOF
FILE REFERENCE: CL000790
CURRENT APPLICATION UMBER: US/09/949,002
CURRENT FILING DATE: 2000-01-28
CURRENT FILING DATE: 2000-01-28
   Вb
                                                                   Q
                                                                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; ORGANISM: Human
US-09-949-002-578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local S
Matches 218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NUMBER OF SEQ ID NOS: 10823
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 578
LENGTH: 76321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CURRENT FILING DATE: 2000-01-28
PRIOR APPLICATION NUMBER: 60/231,401
PRIOR FILING DATE: 2000-09-08
NUMBER OF THE PRIOR P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               847092 AT 847091
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              847152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    847212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      847272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           847390 TGAGCTACAAATCTAATTTTAAGTTTTGTAGTAAACATAATTTA-AAAGTAAAAAGAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             42964 TAAAATTTTCTGATAGCAACATTAA--AAAGTAAAGGAGAAATAGGTGACATTAATTTTAG 43021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       42904 TATCATAGTTCTAGACCAGTGCTGTCCAATAGAAACTACGTATGAGCTACATGCGTAATT 42963
43202 AGTGGCTACCATATTGAACAATGCAGTTATAGACCA 43237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   43022
                                                                                                                                                                                                                                                                                                        43082 TAAAAATTAATGAGACTTACTTATTACTAAGTCTTTGAAATTCAATGTATATTTTATAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3094
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2937
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2877 TTTCAAGTTTGCAGACTAGTGCCATCCAATAGAATTATAATATAAAGTCACATATTTTATT 2936
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Match 2.3%; Score 103.2; DB 6; Local Similarity 64.9%; Pred. No. 1.1e-11; les 218; Conservative 0; Mismatches 108;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGTGACTACTGTATTGGACAGTTCAGTACTAGACAA 3204
                                                                                                                                                                                                                                                                                                                                                ATGAGATATTTTACATCCTTTTTTGTACCAAGTCTTCTAAATGCAGTACATATTTTATAC 3109
                                                                                                                                                                                                                                                                                                                                                                                                                                                               TAATATGTTTTACTTAACTCAGTATATCCTGAATATTATCATTTCAACATGTAACCAATA 43081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TATTACTTTTCACCCA--GTAGTATACCCAAAATAGCGAAATAT-----AGAAATTATTA 3049
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TAAAATTTTCTAGTAACTACATTAAACAAAGTAAAAGTGAGCAGGGCAAAATAATTTTGA 2996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ΑŢ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATAGCCAAATATGGCTCATGGTTACCTTATTGTAAATTGCAGATTTGGAGCATAAAAAGT 847093
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGTGTGTGTATATACTTTTAGCACATCTCCAATTGCATTAGTCACTTTTTAAGTTCTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGTACATATTTTATACTTACTTCCATTTCTTACTTCCGAGTAGCCATATTTCAAGTGTTC- 3152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGGGCAAAATAATTTTGATATTACTTTTCACCCAGTAGTATACCCAAAATAGCGAAATAT 3038
                                                                                                                                                  TCACAGCATATCTCAGTCCAGTCTACCCATATTTCAAGTGCTCGATAACCACTTGTAGCC
                                                                                                                                                                                             TTACTGCATTTCCTTACTTCCGAGTAGCCATATTTCAAGTGTTC-ATTGCCACATGTGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATTGCCACATGTGGCCTGTGACTACTGTATTGGACAGTTCAGTACTAGACAAAAACTAGC 3212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 76321;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                 3168
                                                                                                                                                      43201
                                                                                                                                                                                                                                                                                                            43141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                847153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  847213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           847332
```

Search completed: March 22, 2003, 14:25:08 Job time: 2606 secs

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Minimum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Maximum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OM nucleic - nucleic search, using sw model
   004UN-
                                                                                                                             Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB DB
  776.2
714.4
710.2
702.8
688.8
639.2
                                                                          Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        length:
                                                                         Query
Match
                                                                                                                                                                                                                                                                                                                                               5:
6:
7:
8:
9:
11:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               16154066 seqs, 8097743376 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IDENTITY_NUC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-09-847-046-1
4526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gapop 10.0 , Gapext 1.0
 17.1
15.8
15.7
15.5
15.5
14.1
                                                                                                                                                                                                                                                 18:
19:
20:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GenCore version 5.1.3 Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                             em_htc:*
gb_est1:*
gb_est2:*
gb_htc:*
                                                                                                                                                                                                                                                                                                                                                                                                 em_estmu:*
em_estov:*
em_estpl:*
                                                                                                                                                                      em_gss_other:*
em_gss_pro:*
em_gss_rod:*
                                                                                                                                                                                                                                                                                                                                                                                                                                 em_esthum: *
em_estin: *
                                                                                                                                                                                                                                                                                                                         gb_est3:*
gb_est4:*
                                                                                                                                                                                                                                                                                                                                                                                         em_estro: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                      em_estba:*
                                                                                                                                                                                                     em_gss_mam:*
em_gss_mus:*
                                                                                                                                                                                                                            em_gss_fun:*
                                                                                                                                                                                                                                    em_gss_pln:*
em_gss_vrt:*
                                                                                                                                                                                                                                                          em_gss_inv:*
                                                                                                                                                                                                                                                                               em_estom:*
gb_gss:*
                                                                                                                                                                                                                                                                                                   em_estfun:*
                                                                                                                                                                                                                                                                                                               gb_est5:*
                                                                                                                                                                                                                                                                     em_gss_hum:*
                                                                         Length DB
  784
847
753
743
1266
1453
  9
12
14
9
11
13
AU124110
2 BG546766
1 BM728814
AU119721
1 AK017582
3 BM552780
                                                                          ID
                                                                                                          SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              32308132
AU124110 AU124110
BG546766 602574136
BM728814 UI-E-E01-
AU119721 AU119721
AK017582 Mus muscu
BM552780 AGENCOURT
                                                                    Description
```

0 0 0

0 0

0000000

000

၀ ၀

a

ω 2		2000	٠ د د	41 358.4	376.	38	398.	407.	407.	40	410.	412.	421.	42	425.	42	439.	441.	46	463.	469.	47	475.	481.	483.	485	489.	4.0	549.	552.	556.	56	563.	56	568.	581.	583.	60
	٠	•		σ. -	٠								•	•												0	0	<u>, , , , , , , , , , , , , , , , , , , </u>	.~	2	٠,	2	۲.	.~	2		.2	ω.
_		20	٥,	1177		ന	7	\circ	\mathbf{L}	æ	1	w	\circ	N)	N3	(4)	~1	4	\sim	6.4	-1	\sim 1	~ I	11	m	tπ	0	_	~1	(n	10	\sim	S.	m	m	_	10	\circ
12	1			ي ر																									10	10	12	12	φ	14	13	10	13	10
BF458491	140040	DE159191	DV41470	AA/3/6//	AI333002	AA773166	BI689253	BI655128	AI140821	вQ919809	AW150811	н06836	AA113931	AI014524	AI453818	AI306463	AW131649	AA278675	AI832055	BI689134	AI333000	BG609542	AA278257	AA113856	в1712755	BG863191	AA934775	AW131594	AV662311	W66539	99	BE895218	AL040840		92813	6170	712	4611
BF458491 UI-M-BZ1-	DE 1010101 OF 11 DEL	DEASSASA III-M-D21-	DV0/1/20 Ht-W-D91-	AA/3/6// nw63D12.S	AI333002 qq18g07.x	AA773166 ab66a02.s	60331657	6032809	Ď1:	AGENCOU	ğ	.83g09.r	AA113931 zn27d09.s	u32g09.	j29d02.	n13a(xf32f	s77d(AI832055 wj99g05.x	60331	q18g05.	323429	s77d04.	:n27d09.r	BI712755 ie08h05.y	60279667	m78f08.s	AW131594 xf31h02.x	AV662311	hi90c01.	6022510	60143365)KFZp434	UI-CF-EC	HNC65-1-	EST3737	ie08h05.	6118 AV6461

ALIGNMENTS

REFERENCE AUTHORS ACCESSION VERSION KEYWORDS RESULT 1 AU124110 LOCUS SOURCE ORGANISM JOURNAL COMMENT DEFINITION TITLE sequence. AU124110 AU124110.1 AU124110 AU124110 HRI human cDNA project (Ota,T., Wakamatsu,A., Ozawa,M., Ishii,S., Saito,K., Yamamoto,J., Nakamura,Y., Nishikawa,T., Nagai,T., Suzuki,Y., Sugano,S., Isogai,T.)
Unpublished (2000)
Contact: Takao Isogai
Genomics Laboratory Isogai,T. HRI human Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 784)

Ota,T., Wakamatsu,A., Ozawa,M., Ishii,S., Saito,K., Yamamoto,J.,
Nakamura,Y., Nishikawa,T., Nagai,T., Suzuki,Y., Sugano,S. and Helix Research Institute 1532-3 Yana, Kisarazu, Chiba Tel: 81-438-52-3975 Fax: 81-438-52-3986 EST Email: genomics@hri.co.jp HRI human cDNA project; 5'- & 3'-end one pass sequencing: Helix Research Institute; cDNA library construction: Department of Homo sapiens human. NT2RM2 Homo sapiens GI:10948826 784 bp mRNA linear EST 01-AUG-2002 cDNA clone NT2RM2001681 5', mRNA 292-0812,

FEATURES

source

BASE COUNT ORIGIN

δÃ

Collection (MGC)

þe

Euteleostomi;

Homo.

EST 04-APR-2001

1746

61

```
Query Match
Best Local Similarity
Matches 778; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1686 TGTACTAAGCAAAATGTTACTGAATTTCCTATCATAAAGATGTACAAGAAAGGCGAGAAC 1745
                                                                   GAAATCACTGTGGAAAATCTTCCCAGTTATTTCAGACTTCAGAAACCATTATTTGATTTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGCACACATGCACAAGACATAGTTCAAATAATAACAGATGCACTACTGGAAATGTTTCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAATTATATAAGAGCCTCATCTTGTATTCTAGTGTGTCAGTATTTGGGGACTATTTAGTCCA 1925
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCAGTATCTTATGCTGGAATGTTAGGAACCAAAGATCTCCCTAAAATTTATCCAGCTCAAC 1805
                                                                                                                                                                                                                                                                       AAATACTTGGATTCATTTACTCCATGCTGGTTAAATCTAAAGAATACTCCAGTGGGGAGA
                                                                                                                                                                                                                                                                                                                                                                                                  TTCAGTGATGGCACTGTAAATCCTCAATATAAAAAAGCAATATTGACACTGGTAAAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTTCCAGCCCTGCTTGCCAGACACACAGAAGGCAAAATAGAGAGCATCCCACTAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTTCCAGCCCTGCTTGCCAGACACACAGAAGGCAAAATAGAGAGCATCCCACTAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATCACTGGAATTTATTCTGAAGAAGATGTTTTGCTACTGTCAACCAAATATGCTGCAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGTACTAAGCAAAATGTTACTGAATTTCCTATCATAAAGATGTACAAGAAAGGCGAGAAC
                                                                                                                                                                                                                                                                                                                                                                             TTCAGTGATGGCACTGTAAATCCTCAGTATAAAAAAGCAATATTGACACTGGTAAAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAAATCACTGTGGAAAATCTTCCCAGTTATTTCAGACTTCAGAAACCATTATTGATTTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGCACACATGCACAAGACATAGTTCAAATAATAACAGATGCACTACTGGAAATGTTTCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATCACTGGAATTTATTCTGAAGAAGATGTTTTGCTACTGTCAACCAAATATGCTGCAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGGATTTCATATCCAGTGAATATAACATCGATCCAAGAAGCAGAAGAATATTTAAGTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCAGTATCTTATGCTGGAATGTTAGGAACCGAAGATCTCCTAAAATTTATCCAGCTCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Virology, Institute of Medical Helix Research Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ជា
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         precursor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="NT2RM2001681"
/clone=lib="NT2RM2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="Vector: pME18SFL3; mRNA from uninduced
precursor cells"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /cell_type="teratocarcinoma"
/cell_line="NT2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     17.18;
99.28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 776.2;
Pred. No. 3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      148 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Science,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      222 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; DB 9;
1.9e-137;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        University of Tokyo,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NT2 neuronal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                         2345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                360
                                                                                                                        2465
                                                                                                                                                                                                                                                                          660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1865
                                                                                                                                                                                                                                                                                                                                                                                                                          2285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2045
                                                                                                                                                                                                                                                                                                                                                                           600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 2
BG546766
                               δÃ
                                                                                                                                          Ş
                                                                                                                                                                                                 В
                                                                                                                                                                                                                                             οy
                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                  Ъ
밁
                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
Matches 798; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                   3087
                                            3267
                                                                                                                                             3207
                                                                                                                                                                                                                                                  3147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
241
                                                                                                181
                                                                                                                                                                                                 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        781
                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                                  \vdash
                                                                                                                                                                                                                                                                                                                                                                                             ATAGCGAAATATAGAAATTATTAATGAGATATTTTACATCCTTTTTTGTACCAAGTCTTC 3086
                                                                                                                                                                                                                                                                                                                           TAAATGCAGTACATATTTTATACTTACTGCATTTCTTACTTCCGAGTAGCCATATTTCAA 3146
                                                                                                                                                                                                                      GTGTTCATTGCCACATGTGGCCTGTGACTACTGTATTGGACAGTTCAGTACTAGACAAAA 3206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTTG
                                               TCACAGTTAACTCCACAGTGCATTCATGCAGCTGACAGTTATATTTGTTTTTATTGGAGTC
                                                                                              ACTAGCATAATTAACTTAGTTCTAGCCATGATTTCTATTTGGATTAAAATTAAACTCTAA
                                                                                                                     ACTAGCATAATTAACTTAGTTCTAGCCATGATTTCTATTTGGATTAAAATTAAAACTCTAA
                                                                                                                                                                                                 GTGTTCATTGCCACATGTGGCCTGTGACTACTGTATTGGACAGTTCAGTACTAGACAAAA
                                                                                                                                                                                                                                                                                                    TAAATGCAGTACATATTTAATACTTACTGCATTTCTTACTTCCGAGTAGCCATATTTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BG546766
BG546766.1
EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cDNA Library Preparation: CLONTECH Laboratories, Inc. cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL) DNA Sequencing by: Incyte Genomics, Inc. Clone distribution: MGC clone distribution information can found through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         602574136F1 NIH_MGC_77 Homo sapiens mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Email: cgapbs-r@mail.nih.gov
Tissue Procurement: CLONTECH Laboratories,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Unpublished (1999)
Contact: Robert Strausberg,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             High quality sequence stop: 809.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Plate: LLCM1538 row: h column:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BG546766
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (bases 1 to 847)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /Clone="IMAGE:4702136"
/Clone_lib="NIH_MGC_77"
/Lab_host="DH10B (TI phage-resistant)"
/Lab_host=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .847
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          15.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 714.4; DB 12; Pred. No. 2e-125;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                847
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cDNA clone IMAGE:4702136 5',
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length
```

В

541

2286

601

δÃ В γ В δÃ В δõ В 9 뫄 δÃ 망 δÃ 밁 Ş 밁 Q В

2226

2166

847;

9;

Gaps

5

3266

180

3326 240

300

120

481

2106

421

2046

361

1926

1986

241

301

1866

181

1806

121

Ş B δÃ 밁 δõ B δÃ

2466

721

2406

2346

661

```
RESULT 3
BM728814
LOCUS
                                                                                                                                                                                                                                                                     REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                            VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                               SOURCE
                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                                                                       TITLE
                                                                                                                                                                                                                                                                                                                               ORGANISM
                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3682
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3567
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATGATATTAAAATCAGCGTTTGTCAACCTCAGGGGATATTTAGCAATTGTCGGGAGACAT 3380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TAAATAACCTGCATTGGACAGCGCCCCACAACAAAGAATTATCCTGCCCGAAATGGTAGT 3506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HIIIIIIII
AAATCTAC 847
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAATCTAC 3866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATTCCGGCATTCTGCATCTCCTCATGGAAAGGAGAGGGTCCCTCATCTGAAG-GTTTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GATTCAGCATTCTGCCATCTCCATGGAAAGAGGCTCCCTCATCTGAAGCGTCTCTG 3858
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACGAAAGTGATGGGATAACCCTAGAAGAGGACTCAGAATGATATCTCATATTTTAAAGTG 720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAGAAAGTGATGGGATAACCCTAGAAGAGGACTCAGAATGATATTTATATTTTAAGTGAG 3741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTTCCTGGTTCTGCTCACGTATCATGTTTGACAAAACATTTTGGCTATTAAAGATATGTA 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTTCCTGGTTCTGCTCACGTATCATGTTTG--AAAAAATTTTTGGCTATTAAAGATATGT- 3623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CGTGCCAAGGCTGAGTAACCTTGTGTTAAAAGTAACCTGTGGCAGACTAGGTTTCCAGAA 3566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TAAATAACCTGCATTGGACAGCGCCCCCACAACAAAGAATTATCCTGCCCGAAATGGTAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTTTGATGTCATGACCTAGGGCAGTTATTGACATTTAGTGAGTAGAGGCCATGGATCCTGC 3446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTTTGATGTCATGACTAGGGCAGTTATTGACATTTAGTGAGTAGAGGCCATGGATCCTGC
                                                                                                                                                                                                                                                                                                                                                                                          753 bp mRNA linear EST 01.
UI-E-E01-aiv-d-13-0-UI.r1 UI-E-E01 Homo sapiens cDNA clone
UI-E-E01-aiv-d-13-0-UI 5', mRNA sequence.
Email: msoares@blue.weeg.uiowa.edu
Tissue Procurement: Dr. Gregg Hageman
cDNA Library preparation: Dr. M. Bento Soares, Univeristy of Iowa
cDNA Library Arrayed by: Dr. M. Bento Soares, Univeristy of Iowa
DNA Sequencing by: Dr. M. Bento Soares, Univeristy of Iowa
Clone Distribution: Researchers may obtain clones from Research
Genetics (www.resgen.com).
                                                                                                         451 Eckstein Medical Research Building Iowa City, Tel: 319 335 8250 Fax: 319 335 9565
                                                                                                                                                          Program for Rat Gene Discovery and Mapping University of Iowa
                                                                                                                                                                                                                                                                                                                                 Homo sapiens
                                                                                                                                                                                                                                                                                                                                                               BM728814.1 GI:19050147
EST.
                                                                                                                                                                                          Contact: Soares, MB
                                                                                                                                                                                                                     Genome Rés. 6 (9), 791-806 (1996)
                                                                                                                                                                                                                                        discovery
                                                                                                                                                                                                                                                                    Bonaldo, M.F.,
                                                                                                                                                                                                                                                                                                  Mammalia;
                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa;
                                                                                                                                                                                                                                                       Normalization and
                                                                                                                                                                                                                                                                                                                                                  human
                                                                                                                                                                                                                                                                                     (bases
                                                                                                                                                                                                                                                                        ; weckazoa; Chordata; (
); Eutheria; Primates; C
% 1 to 753)
                                                                                                                                                                                                                                                                    Lennon, G. and
                                                                                                                                                                                                                                                    subtraction:
                                                                                                                                                                                                                                                                     Soares, M.B.
                                                                                                                                                                                                                                                                                                 Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                     two
                                                                                                                                                                                                                                                    approaches
                                                                                                                                                                                                                                                     ç
                                                                                                                                                                                                                                                       facilitate
                                                                                                                                             ΙA
                                                                                                                                                                                                                                                                                                                                                                                                                                         EST 01-MAR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3386
 Š
                                Вb
                                                           Qγ
                                                                                              밁
                                                                                                                      QΥ
                                                                                                                                                        밁
                                                                                                                                                                                   Qy
                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                             Ъ
                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORIGIN
   3619
```

Q 밁 δõ В

밁

δÃ

Qy

밁 δ 망

В

Qy

밁

δ 밁 Š В Ş 밁 δÃ

```
BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best Local Similarity Matches 748; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                3499
                                                                                                                                                                                                                                                3439
                                                                                                                                                                                                                                                                                                                                             3379
                                                                                                                                                                                                                                                                                                                                                                                                                                           3319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3079 AAGTCTTCTAAATGCAGTACATATTTTATACTTACTGCATTTCTTACTTCCGAGTAGCCA 3138
477
                                                                                                421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121
                                                                                                                                                                                                361
                                                                                                                                                                                                                                                                                                301
                                                                                                                                                                                                                                                                                                                                                                                           241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      \vdash
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAGTCTTCTAAATGCAGTACATATTTTATACTTACTGCATTTCTTACTTCCGAGTAGCCA
                                                                                                                                                                                                                         GATCCTGCTAAATAACCTGCATTGGACAGCGCCCCACAACAAAGAATTATCCTGCCCGAA 3498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TATTTCAAGTGTTCATTGCCACATGTGGCCTGTGACTACTGTATTGGACAGTTCAGTACT 3198
                         TTCCAGAATTTCCTGGTTCTGCTCACGTATCATGTTTGAAAAAATTTTTGGCTATTAAAGA 3618
                                                                                                                      ATGGTAGTCGTGCCAAGGCTGAGTAACCTTGTGTTAAAAGTAACCTGTGGCAGACTAGGT 3558
                                                                                                                                                                                                GATCCTGCTAAATAACCTGCATTGGACAGCGCCCCACAACAAAGAATTATCCTGCCCGAA
                                                                                                                                                                                                                                                                                                GGAGACATTTTTGATGTCATGACTAGGGCAGTTATTGACATTTAGTGAGTAGAGGCCAGG
                                                                                                                                                                                                                                                                                                                    GGAGACATTTTTGATGTCATGACTAGGGCAGTTATTGACATTTAGTGAGTAGAGGCCATG
                                                                                                                                                                                                                                                                                                                                                                                        TTGGAGTCATGATATTAAAATCAGCGTTTGTCAACCTCAGGGGATATTTAGCAATTGTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AACTCTAATCACAGTTAACTCCACAGTGCATTCATGCAGCTGACAGTTATATTTGTTTTA 3318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGACAAAAACTAGCATAATTAACTTAGTTCTAGCCATGATTTCTATTTGGATTAAAATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGACAAAAACTAGCATAATTAACTTAGTTCTAGCCATGATTTCTATTTGGATTAAAATTA 325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TATTTCAAGTGTTCCTTGCCACATGTGGCCTGTGACTACTGTATTGGACAGTTCAGTACT
TTCCAGAATTTCCTGGTTCTGCTCACGTATCATGTTTGAAAAAATTTTTGGCTATTAAAGA
                                                                                                ATGGTAGTCGTGCCAAGGC----TAACCTTGTGTTAAAAGTAACCTGTGGCAGACTAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         >MER20#DNA/MER1_type
Seq primer: M13 Reverse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sequence: 1-116,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The following repetitive elements were found in this cDNA requence: 1-116, >MER33#DNA/MER1_type (matched compliment)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Constructed according to Bonaldo, Lennon and Soares,
Genome Research, 6:791-806, 1996. First strand cDNA
synthesis was primed with an oligo-dT primer containing a
Not I site. Double stranded cDNA was ligated to an EcoR I
adaptor, digested with Not I, and cloned directionally
into pT7T3-Pac vector. The oligonuclectide used to prime
the synthesis of first-strand cDNA contains a library tag
sequence that is located between the Not I site and the
(dT)18 tail. The sequence tag for this library is
CGCGTATACC. This library was created for the program, Gene
Discovery in the Visual System, supported by National Eye
Institute (NEI)."

21 a 137 c 143 g 250 t 2 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /lab_host="DH10B (Life Technologies) (T1 phage re/note="Organ: eye; Vector: pT7T3-Pac (Pharmacia) modified polylinker; Site_1: EcoR ; Site_2: Not UT-E-EOI is a normalized CDNA library containing following tissue(s): fetal eye. The library was
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /tissue_type="fetal eye"
/dev_stage="fetal"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /clone_lib="UI-E-EO1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /clone="UI-E-EO1-aiv-d-13-0-UI"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          15.7%;
98.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 710.2; DB 14
Pred. No. 1.3e-124;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     resistant)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 with I; I; the
                                                                                                  476
                                                                                                                                                                                                420
                                                                                                                                                                                                                                                                                                360
                                                                                                                                                                                                                                                                                                                                           3438
                                                                                                                                                                                                                                                                                                                                                                                                                                        3378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      60
                                                                                                                                                                                                                                                                                                                                                                                           300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ω
```

TATGTATTAGATGGTCTTATCCTGATTATTACCTGGATACAACTTGATCTTTTCTAATAT 3678

```
RESULT 4
AU119721
LOCUS
                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VERSION
KEYWORDS
SOURCE
                     δÃ
                                                   В
                                                                                                          Ъ
                                                                                                                                    QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
В
                                                                                                                                                                                                                                     BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                 Query Match
Best Local Sim
Matches 715;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
                                                                                3421
                                                                                                                          3361 GATATTTAGCAATTGTCGGGAGACATTTTTGATGTCATGACTAGGGCAGTTATTGACATT 3420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3679
                         3481
                                                                                                                                                                                                                                                                                                                                                source
121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              715
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         597
                                                     61
                                                                                                                                                                                 Local Similarity
        AGAATTATCCTGCCCGAAATGGTAGTCGTGCCAAGGCTGAGTAACCTTGTGTTAAAAGTA 3540
                                                                  TAGTGAGTAGAGGCCATGGATCCTGCTAAATAACCTGCATTGGACAGCGCCCCACAACAA 3480
                                                                                                            GATATNTAGCAATTGTCGGGAGACATTTTTGATGTCATGACTAGGGCAGTTATTGACATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAGTCTTAAAACCTCCTCTTATTTCTACAAGTTATATGGCTAAATTTCAGATTGAACAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTTCAGAAAGTGATGGGATAACCCTAGAAGAGGACTCAGAATGATATTTATATTTTAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTTCAGAAAGTGATGGGAT-ACCCTAGAAGAGGA-TCAGAATGATATTTATATTTTAAGT
AGAATTATCCTGCCCGAAATGGTAGTCGTGCCAAGGCTGAGTAACCTTGTGTTAAAAGTA
                                                                                                                                                                                                                                                                                                                                                                      Email: genomics@hri.co.jp
HRI human cDNA project; 5'- & 3'-end one pass sequence
Research Institute; cDNA library construction: Departu
Virology, Institute of Medical Science, University of
Helix Research Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence
AU119721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AU119721
AU119721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Unpublished (2000)
Contact: Takao Isog
Genomics Laboratory
                                                                                                                                                                                                                                                                                                                                                                                                                                            Helix Research Institute
1532-3 Yana, Kisarazu, Chiba
Tel: 81-438-52-3975
Fax: 81-438-52-986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 743)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HRI human cDNA project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Yamamoto,J., Wakamatsu,A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ota, T., Nishikawa, T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens
                                                                                                                                                                                                                                      197
                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                  /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="HEMBA1006479"
/clone_lib="HEMBA1"
/tissue_type="whole embryo, mai/dev_stage="embryo, 10 weeks"
/note="Vector: pME18SFL3"
a 141 c 147 g 254 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Takao Isogai
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HEMBA1
                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GI:10934956
                                                                                                                                                                             15.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         743
sapiens
                                                                                                                                                                   0;
                                                                                                                                                                              Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Suzuki,Y.,
                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Nakamura,Y.,
                                                                                                                                                                                 702.8;
No. 3.
                                                                                                                                                                                No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            bp
cdna
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         292-0812,
                                                                                                                                                                                                                                                                                                                                                                                                     -end one pass sequencing:
construction: Department
                                                                                                                                                                 B; DB 9;
3:3e-123;
1es 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ishii,S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            mRNA linear 1
clone HEMBA1006479
                                                                                                                                                                                                                                                                             mainly head"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3837
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Nagai, T.,
                                                                                                                                                                                                                                      4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Saito, K.,
                                                                                                                                                                                           Length
                                                                                                                                                                                                                                     others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      K., Kawai,Y.,
Sugano,S. an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EST 01-AUG-2002
                                                                                                                                                                                                                                                                                                                                                                                        Tokyo,
                                                                                                                                                                                                                                                                                                                                                                                                                    Helix
                                                                                                          60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3798
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       654
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              596
                                                                                                                                                                                                                                                                                                                                                                                        and
```

1

```
ACCESSION
VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                     PUBMED
REFERENCE
                                                                                                                                                                                                                                                                                                    REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 5
AK017582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q
                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Locus
                                                                                                                                    JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                     JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM
                                                                                                                                                                                       TITLE
                                                                                                                                                                                                                       AUTHORS
                                                                                                                     PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTGAGCCACACGGCCTCATTCTGTGAGGGAGGGGAAAGATTAGCCAAAGAGTTAATTTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTCATCTGAAGCGTCTCTGAAATCTACCCTTGCAAGCTTCAGACAAATCAGTTGATCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTGAGCCACACGGCCTCATTCTGTGAGGGAAGGGGAAAGATTAGCCAAAGAGTTAATTTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTCATCTGAAGCGTCTCTGAAATCTACCCTTGCAAGCTTCAGACAAATCAGTTGATCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAATTTCAGATTGAACAGGGATTCAGCATTCTGCCATCTCCTCATGGAAAGAGAGGCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAATTTCAGATTGAACAGGGATTCAGCATTCTGCCATCTCCTCATGGAAAGAGAGGCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGATATTTATATTTTAAGTGAGTCTTAAAACCTCCTCTTATTTCTACAAGTTATATGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGATATTTATATTTAAGTGAGTCTTAAAACCTCCTCTTATTTCTACAAGTTATATGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACTTGATCTTTTCTAATATTTTCAGAAAGTGATGGGATAACCCTAGAAGAGGACTCAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACTTGATCTTTTCTAATATTTTCAGAAAGTGATGATGAGAACCCTAGAAGAGGGACTCAGAA
Shibata, K., Itoh, M., Aizawa, K., Nagaoka, S., Sasaki, N., Carninci, P., Konno, H., Akiyama, J., Nishi, K., Kitsunai, T., Tashiro, H., Itoh, M., Sumi, N., Ishii, Y., Nakamura, S., Hazama, M., Nishine, T., Harada, A., Yamamoto, R., Matsumoto, H., Sakaguchi, S., Ikegami, T., Kashiwagi, K., Fujiwake, S., Inoue, K., Togawa, Y., Izawa, M., Ohara, E., Watahiki, M., Yoneda, Y., Ishikawa, T., Ozawa, K., Tanaka, T., Mafsunra c
                                                                                                                                                  Carninci,P., Shibata,Y., Hayatsu,N., Sugahara,Y., Shibata,K., Itoh,M., Konno,H., Okazaki,Y., Muzamatsu,M. and Hayashizaki,Y. Normalization and subtraction of cap-trapper-selected cDNAs to prepare full-length cDNA libraries for rapid discovery of new commerce. Res. 10 (10), 1617-1630 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                               AK017582 GI:12856892
AK017582.1 GI:12856892
HTC; CAP trapper.
Mus musculus (strain:C57BL/6J) 8 days
clone_lib:RIKEN full-length enriched m
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mus musculus 8 days embryo whole body cDNA, enriched library, clone:5730420B22:homolog t (FRAGMENT), full insert sequence.
                                                                                                                                                                                                                                                                                     Carninci, P. and Hayashizaki, Y. High-efficiency full-length cDNA Meth. Enzymol. 303, 19-44 (1999)
                                                                                                                                                                                                                                                                                                                                                                                     Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                     clone:5730420B22.
                                                                                                                                                                                                                                                                                                                                                     Mammalia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AK017582
                                                                                                                                                                                                                                                                                                                                                     Metazoa;
Eutheria;
                                                                                                                                                                                                                                                                                                                                                     Chordata;
Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1266 bp
                                                                                                                                                                                                                                                                                                                                                  Craniata; Veri
Sciurognathi;
                                                                                                                                                                                                                                                                                                                                                                                                                      mouse
                                                                                                                                                                                                                                                                                                                                                                                                                    embryo cDNA to mR
nouse cDNA library
                                                                                                                                                                                                                                                                                                                                                                    Vertebrata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                linear HTC 19-JAN, RIKEN full-length to KIAA1344 PROTEIN
                                                                                                                                                                                                                                                                                                                                                         Muridae;
                                                                                                                                                                                                                                                                                                                                                                      Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  HTC 19-JAN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3839
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              240
```

```
REFERENCE
                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PUBMED
                                                               source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RS Kawai,J., Shinagawa,A., Shibata,K., Yoshino,M., Itoh,M., Ishii,Y., Arakawa,T., Hara,A., Fukunishi,Y., Konno,H., Adachi,J., Fukuda,S., Alzawa,K., Izawa,M., Nishi,K., Kiyosawa,H., Kondo,S., Yamanaka,I., Saito,T., Okazaki,Y., Gojobori,T., Bono,H., Kasukawa,T., Saito,R., Kadota,K., Matsuda,H., Ashburner,M., Batalov,S., Casavant,T., Fleischmann,W., Gaasterland,T., Gissi,C., King,B., Kochiwa,H., Kuehl,P., Lewis,S., Matsuo,Y., Nikaido,I., Pesole,G., Ouackenbush,J., Schriml,L.M., Staubli,F., Suzuki,R., Tomita,M., Wagner,L., Washio,T., Sakai,K., Okido,T., Furuno,M., Aono,H., Baldarelli,R., Barsh,G., Blake,J., Boffelli,D., Bojunga,N., Carninci,P., de Bonaldo,M.F., Brownstein,M.J., Bult,C., Hofmann,M., Hume,D.A., Kamiya,M., Lee,N.H., Lyons,P., Hofmann,M., Hume,D.A., Kaniya,M., Lee,N.H., Lyons,P., Nordone,P., Ring,B., Ringwald,M., Rodriguez,I., Sakamoto,N., Sasaki,H., Sato,K., Schonbach,C., Seya,T., Shibata,Y., Storch,K.F., Suzuki,H., Saro, K., Schonbach,C., Seya,T., Shibata,Y., Kawaji,H., Kohtsuki,S., and Hawashifa, V., Voshida,K., Hasegawa,Y., Kawaji,H., Kohtsuki,S., and Haseli and Matsuki, S., Suzuki, H., Kohtsuki,S., Suzuki, H., Koht
                                                                                                                                               5 (bases 1 to 1266)
5 (bases 1 to 1266)
7 (bases 1 to 1266)
8 (bases 1, Acnon, H., Budt, A., Bult, C., Acrai, A., Acrai, A., Acrai, A., Haraka, T., Haraka, T., Haraka, T., Haraka, T., Kouda, M., Koya, S., Kurihara, C., Matsuyama, T., Miyazaki, A., Nishi, K., Nomura, K., Kumazaki, R., Ohno, M., Okazaki, Y., Okido, T., Owa, C., Quackenbush, J., Saito, H., Saito, R., Sakai, C., Sakai, K., Sano, H., Sasaki, D., Schriml, L., Shibata, K., Shibata, Y., Shinagawa, A., Shiraki, T., Schriml, L., Shibata, K., Shibata, Y., Shinagawa, A., Takahashi, F.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Physical and Chemical Research (RIKEN), Laboratory for Genome Exploration Research Group, RIKEN Gemomic Sciences Center (GSC), RIKEN Yokohama Institute; 1-7-22 (GSC), Tsurumi-ku, Yokohama, Kanagawa 230-0045, Japan (E-mail:genome-res@gsc.riken.go.jp, URL:http://genome.gsc.riken.go.jp/, Tel:81-45-503-9222, Fax:81-45-503-9216)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Okazaki,Y., Muramatsu,M., Inoue,Y., Kira,A. and Hayashizaki,Y. RIKEN integrated sequence analysis (RISA) system -384-format sequencing pipeline with 384 multicapillary sequencer genome Res. 10 (11), 1757-1771 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Submitted (10-JUL-2000) Yoshihide Hayashizaki, The Institute of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sogabe,Y., Suzuki,H., Tagami,M., Tagawa,A., Takahashi,F., Tanaka,T., Tejima,Y., Toya,T., Yamamura,T., Yamanaka,I., Yasunishi,A., Yoshida,K., Yoshino,M., Muramatsu,M. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Functional annotation of a full-length mouse cDNA collection Nature 409 (6821), 685-690 (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Genome Res.
20530913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Hayashizaki,Y.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   and Hayashizaki,Y.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     further details.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Please visit our web site (http://genome.gsc.riken.go.jp/) for
                                                                                                                                  BamHI. Host: DH10B
                                                                                             Location/Qualifiers
                              /organism="Mus musculus"
                                                            밁
                                                                                                                                                                                           В
                                                                                                                                                                                                                                                    Q
                                                                                                                                                                                                                                                                                                                   뫄
                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ΩV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ΩV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   131
905 TGCCCTTTTGGAAAGTATTGGCTCTGAGGATGTGGAATATGCACATCTCTACTTTTTTCA 964
                                                               731
                                                                                                                           845
                                                                                                                                                                                           671
                                                                                                                                                                                                                                                          785
                                                                                                                                                                                                                                                                                                                          611
                                                                                                                                                                                                                                                                                                                                                                                      725
                                                                                                                                                                                                                                                                                                                                                                                                                                                         551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               350
```

```
305 TTGTCTTAGGAAACAGAACAGCAGTGAAAAAACAGACAAAATC-----CGCTCAGAT 358
                                                                                                                                                                                                                                                                         TAGTGAAGTGAAATATATTACCAACCTGGAAGACCTTCAGAACATAGAAAATGCTCTGAA 784
                                                                                                                                                                                                                                                                                                                                                                                          TACTGACACCTTGTTTGATGTGAATGCCATTGTCGCCCATGTTCTCTTTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGGGATTTCAGTTGCAAAGGTTACTTGTGTTGAAGAAGAAGCATCTCAAGGTACTGTGGGGA 490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCTAAGTAACTCTGTGTTTCTTGAAGAACTAAAAGAAGCTGTCAAGCCTCTCCAGGACTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACAACTGCAGCTGATAATGTTTTCCGGCTTCAATGTCTTTAGAGTTTGGGATCTCTTTTGT 418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCGCTTCAAGCAGTAGAACACGGCAGTGAAGAAAACAGACAAGTCTCCTGGCACGCGTCT 190
AGTCATGGAAGCTGCTTTTGTGTATGGGACCTCTTACCAGTTTGCCTTAACCACAGAAAT
                                                                                                                                                                                AGGAAAAGCAAATATTATATTCTCATATGTAAGAGCCATTGGAATACCAGAGCACAGAGC 844
                                                                                                                                                                                                                                            TAATGAAGTAAAATATTACCACCCTGGAAGACCTTCACAGCATAGAAAACTCTCTGAA
                                                                                                                                                                                                                                                                                                                                                                    CACGGACATCTTGTTTGATGTGAACGCCATCATTGCTCATGTTCTCTTTTGCTCTGTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGAAGAGGGTTTGATGAAAGCGTATTTATTCAGAGGCAACATACTTCTCAGAGAATTCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGGAATTTCAGTTGCCAAGGTTAATTGTCGTCAAAGAAGAAATATCAAGATACTGTGGAAA 604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATATTTAGTACATTGCAACCAGG------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTTGATGTGCAGTTTTTACAAGTCAACTGAAGACTCTCTCCCCAGAACTGACTCCTCAGCA 310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CATAATGTGCATTTTTTACATGCCAACAGTAAACTCTTTACCAGAACTGAGTCCTCAGAA 478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCAGGCACAGCTCATGATGTCTTCTGGCTTCAGTGTCTTTAGAGCTGGTGTTGCATTGGT
                                                     AGTCATGGAAGCCGGTTTTGTGTATGGGACTACATACCAATTTGTCTTAACCACAGAAAT 904
                                                                                                                    AGGAAAATCAAATATGATATTCTCATACGTAGAAGCCATCGGAACACCAGAGCATAGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGAAAAGGATTTGATGAAAGCATATTTATTCAAGGGCAACATATTGCTCAGAGAATTCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -----TCTTGAAGAACTGAATGAGGCTGTTAGACCTCTGCAGGACTA 544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FLVLNDVELIISHVKNNMHI"
275 c 305 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MIFSYVEAIGTPEHRAVMEAAFVYGTSYQFALTTEIALLENIGSESIEHAHLYFFHCK
LVLDLTEHCRRTLMEQPLTTLNIHVFVKTMNAPLLMEVAEDPQQVSTVHLQLGLPLVF
IISQRATQEADRRTAEMVAWHLLGKAGVLLLLRDSMDVNIPQHANVAFRRAEKDVPVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KASLVYFCQVGSLSNSVFLEELKEAVKPLQDYGISVAKVTCVEEEASRYCGEEEGLMX
AYLFRGNILLREFPTDILFDVNAIIAHVLFALLFNEVKYITTLEDLHSIENSLKGKSN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /protein_id="BAB30819,1"
/db_xref="GI:12856893"
/db_xref="MGD:MGI:1917811"
/translation="MMSSGFSVFRAGVALVLMCSFYKSTEDSLPELTPQQYFSTLQPG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   putative"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /clone_lib="RIKEN full-length enriched mouse cDNA library"
/dev_stage="8 days embryo"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /db_xref="FANTOM_DB:5730420B22"
/db_xref="MGD:MGI:1902965"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         homolog
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="data source:SPTR, source key:Q9P2K2, evidence:ISS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /db_xref="taxon:10090"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             15.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      to KIAA1344 PROTEIN (FRAGMENT)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 688.8; DB 11;
Pred. No. 1.3e-120;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    192;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 1266;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                60; Gaps
                                                                                                                                                                                                                                         670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     430
                                                                                                                    730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      550
                                                                                                                                                                                                                                                                                                                                                                    610
                                                                                                                                                                                                                                                                                                                                                                                                                             724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2
```

```
RESULT 6
BM552780
LOCUS
                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                дδ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ωy
                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DЬ
                                                                                                                                                                                                                                                                                                                                                    COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1031
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1085
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1091
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      971
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          911
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   851
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          791
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GACCACACTCAATATTCACGTATTTGTGAAGACAATGAACGCACCTCTGTTGATGGAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCCTCAAGATGCTAATGTGGTCTTCAAAAGAGCAGAAGAGGGAGTTCCAGTGGAATTTTT 1324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCGTCTTCTGGGAAAAGCAGGAGTTCTACTCTTGTTAAGGGACTCTTTTGGAAGTGAACAT 1264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TATTATCAGCCAGCGCGCTACCCAGGAGGCTGACAGAAGAACTGCGGAGTGGCGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TATTGTTAGCCAACAGGCTACTTATGAAGCTGATAGAAGAACTGCAGAATGGGTTGCTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GACTACACTGAACATTCACCTGTTTATTAAGACAATGAAAGCACCTCTGTTGACTGAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTGTAAACTAGTCTTGGACTTGACCCAGCAATGTAGAAGAACACTAATGGAACAGCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGCTCTTTTAGAAAATATCGGCTCTGAGAGTATAGAACATGCACATCTCTACTTTTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCCTCAGCACGCTAATGTGGCCTTCAGAAGAGCAGAAGGATGTGCCTGTGGAGTTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCACCTTCTGGGGAAAGCAGGGGTTCTGCTCTTGTTGAGGGACTCCATGGATGTTAACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTGTAAACTGGTCTTGGACTTGACCGAGCATTGCAGAAGAACACTAATGGAACAGCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGENCOURT_6542342 NIH_MGC_119 BK552780
                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Metazoa; Chordata; Mammalia; Eutheria; Primates; 1 (bases 1 to 1453)
                                                                                                                                                                                                                                                                                                                    Email: cgapbs-r@mail.nih.gov
Tissue Procurement: Life Technologies,
                                                                                                                                                                                                                                                                                                                                                  Contact: Robert Strausberg, Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BM552780.1 GI:18790935
EST.
                                                                                                                                                                                                                  http://image.llnl.gov
Plate: LLAM12761 row: c column:
                                                                                                                                                                                                                                                                                                                                                                 Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                             NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens
                                                                                                                                                                                                                                             CDNA Library Preparation: Life Technologies, Inc. CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLN DNA Sequencing by: Agencourt Bioscience Corporation Clone distribution: MGC clone distribution information found through the I.M.A.G.E. Consortium/LLNL at:
                                                                                                                                                                                                       quality sequence stop: 628
                                                                                      /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="IMAGE:5742650"
/clone_llb="NIH_MGC_119"
/tissue_type="medulla"
/lab_host="DH10B"
/note-*Organ: brain; Vector: pCMV-SPORT6; Site_1: NotI; Site_2: EcoRV (destroyed); RNA source normal medulla from anonymous male age 27. Library is oligo-dT primed and directionally cloned (EcoRV Site is destroyed upon cloning). Average insert size 1.3 kb, insert size range 0.9-3 kb. Library is normalized and enriched for
                                                                                                                                                                          Location/Qualifiers
1. .1453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ф
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo
                                                                                                                                                                                                                                                                                                                                                                                                                      Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    sapiens
                                                                                                                                                                                                                                                                                                                                                                             Gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    linear EST cDNA clone I
                                                                                                                                                                                                                                                                                                                                                                              Collection
                                                                                                                                                                                                                                                                                        (LLNL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ST 20-FEB-2002
IMAGE:5742650
                                                                                                                                                                                                                                                               can
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1084
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            970
                                                                                                                                                                                                                                                                be
                                                                                                                                                                                                                  RESULT 7
AV646118
LOCUS
                                                                                                                                              KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                   Q
                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                          Qγ
                                                                                                                                                                                                                                                                                                                                                                                                      멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                      ACCESSION
                                                                                                                                                                                                                                                                                           뭐
                                                                                       REFERENCE
                                                                                                                                                                            VERSION
                TITLE
```

```
BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches 652;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3325
                                                                                                                                                                                                           3205
                                                                                                                                                                                                                                                                   3145
                                                                                                                                                                                                                                                                                                                               3085
                                                                                                                                                                                                                                                                                                                                                                                         3025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2845
601
                                                         541
                                                                                                                   481
                                                                                                                                                                                                                                       361
                                                                                                                                                                                                                                                                                                   301
                                                                                                                                                                                                                                                                                                                                                             241
                                                                                                                                                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local Similarity
              ATTTTTGATGTCATGACTAGGGCAGTTATTGACATTTAG-TGAGTAGAGGCCATGG
                                                                        TCATGATATTAAAATCAGCGTTTGTCAACCTCAGGGGATATTTAGCAATTGTCGGGAGAC
                                                                                                                                                                             AAATAGCGAAATATAGAAATTATTAATGAGATATTTTACATCCTTTTTTGTACCAAGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATTTTTGATGTCATGACTAGGGCAGTTATTGACATTTAGTTGAGTAGAGGCCAGGG
                                                         TCATGATATTAAAATCAGCGTTTGTCAACCTCAGGGGATATTTAGCAATTGTCGGGAGAC
                                                                                                                   AATCACAGTTAACTCCACAGTGCATTCATGCAGCTGACAGTTATATTTGTTTTATTGGAG
                                                                                                                                   AATCACAGTTAACTCCACAGTGCATTCATGCAGCTGACAGTTATATTTGTTTTTATTGGAG
                                                                                                                                                                                                                                      AAGTGTTCCTTGCCACATGTGGCCTGTGACTACTGTATTGGACAGTTCAGTACTAGACAA
                                                                                                                                                                                                                                                                                                                                                                                                                       AAGTAAAAGTGAGCAGGGCAAAATAATTTTGATATTACTTTTCACCCAGTAGTATACCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATAGAATTATAAGTCACATATTTTATTTAAAATTTTCTAGTAACATTAAACA
                                                                                                                                                                                                                                                                     AAGTGTTCATTGCCACATGTGGCCTGTGACTACTGTATTGGACAGTTCAGTACTAGACAA
                                                                                                                                                                                                                                                                                                                                                             AAATAGCGAAATATAGAAATTATTAATGAGATATTTTACATCCTTTTTTGTACCAAGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAGTAAAAGTGAGCAGGGCAAAATAATTTTGATATTTACTTTTCACCCAGTAGTATACCCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATAGAATTATAATATAAGTCACATATTTTATTTAAAAATTTTCTAGTAACTACATTAAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  full-length clones and was const
(Invitrogen). Research Genetics
this is a NHH_MGC Library."
288 c 284 g 423 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            14.18;
99.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 639.2; DB 13; Pred. No. 3.4e-111;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 was constructed by C. Gruber Genetics tracking code 013. Note:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                     3204
                                                                                                                                                                                                                                                                                                                                                                                         3084
                                                                                                                                                                                                                                                                                                                                                                                                                                                    3024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2904
                                                                                                                     540
                                                                                                                                                 3324
                                                                                                                                                                                480
                                                                                                                                                                                                           3264
                                                                                                                                                                                                                                         420
                                                                                                                                                                                                                                                                                                                               3144
                                                                                                                                                                                                                                                                                                                                                                                                                       240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      60
                                                                                                                                                                                                                                                                                                   360
                                                                                                                                                                                                                                                                                                                                                              300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1.
```

DEFINITION ORGANISM AUTHORS AV646118 AV646118 AV646118 AV646118. EST. Xu,X., Huang,J., Xu,Z., Qian,B., Zhu,Z., Yan,Q., Cai,T., Zhang,X. Xiao,H., Qu,J., Liu,F., Huang,Q., Cheng,Z., Li,N., Du,J., Hu,W., Shen,K., Lu,G., Fu,G., Zhong,M., Xu,S., Gu,W., Huang,W., Zhao,X., Hu,G., Gu,J., Chen,Z. and Han,Z.
Insight into hepatocellular carcinogenesis at transcriptome level by comparing gene expression profiles of hepatocellular carcinoma Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 605) human. <u>.</u> GLC Homo sapiens GI:9867132 605 CDNA đđ clone mRNA linear ne GLCAJF06 3', EST 15-JAN-2002 mRNA sequence.

ţ

```
BASE COUNT
ORIGIN
                δô
                                             В
                                                                 γ
                                                                                              В
                                                                                                               γ
                                                                                                                                            В
                                                                                                                                                               δ
                                                                                                                                                                                      В
                                                                                                                                                                                                                Qγ
                                                                                                                                                                                                                                       . B
                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                          DЬ
                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                            Qγ
                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                 οy
                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Qy.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               source
                                                                                                                                                                                                                                                                                                                                            181
601
                      601
                                                                                               481
                                                                                                                      481
                                                                                                                                               421
                                                                                                                                                                      421
                                                                                                                                                                                                                      361
                                                                                                                                                                                                                                                                                           241
                                                                                                                                                                                                                                                                                                                                                                   181
                                                                                                                                                                                                                                                                                                                                                                                            121
                                                                                                                                                                                                                                                                                                                                                                                                                    121
                                                                      541
                                                                                                                                                                                              361
                                                                                                                                                                                                                                             301
                                                                                                                                                                                                                                                                    301
                                                                                                                                                                                                                                                                                                                  241
                                                                                                                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    μ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCCGAGTCGGTGGCGGCTGCAGGCTGGGAGGAAGTGCTACGCCTTTGCAGGTTGGCG
GAAA
                     GAAA 604
                                                                                             ATTTTAGTACATTGCAACCAGGTCTTGAAGAACTGAATGAGGCTGTTAGACCTCTGCAGG
                                                                                                                                                         TAATGTGCATTTTTTACATGCCAACAGTAAACTCTTTACCAGAACTGAGTCCTCAGAAAT
                                                                                                                                                                                                         AACTGCAGCTGATAATGTTTTCCGGCTTCAATGTCTTTAGAGTTGGGGATCTCTTTTGTCA 420
                                                                                                                                                                                                                                                                                          AAGTGGTTCCAGGCTACCCGGCTAGTCTGGCACGGCCCCGTCTTCTGCCTCCTCCTCCGT 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCCGAGTCGGTGGCGCTGCAGGCTGGGAGAGAGTGCTACGCCTTTGCAGGTTGGCG
                                             TAATGTGCATTTTTACATGCCAACAGTAAACTCTNTACCAGAACTGAGTCCTCAGAAAT
                                                                                                                                                                                              AACTGCAGCTGATAATGTTTTCCGGCTTCAATGTCTTTAGAGTTTGGGATCTCTTTTGTCA
                                                                                                                                                                                                                                                         AGTGTTGTCTTAGGAAACAGAACACAGCAGTGAAAAAACAGACAAAATCCGCTCAGATAC
                                                                                                                                                                                                                                                                                                                  ATTTGAAAGTAGCAAAATAGAAATAAAGAATTAACAGCAGATACAGAGGACAGCATGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                           AAGTGGTTCCAGGCTACCCGGCTAGTCTGGCCACGGCCCCGTCTTCTGCCTCCTCCTCCGT
                                                                      ACTATGGAATTTCAGTTGCCAAGGTTAATTGTGTCAAAGAAGAAATATCAAGATACTGTG 600
                                                                                                                                                                                                                                            AGTGTTGTCTTAGGAAACAGAACACAGCAGTGAAAAAACAGACAAAATCCGCTCAGATAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           602;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        with those of corresponding noncancerous liver
Proc. Natl. Acad. Sci. U.S.A. 98 (26), 15089-15094 (2001)
21625106
Contact: Zeguang Han
Chinese National Human Genome Center at Shanghai
351 Guo Shoujing Road, Zhangjiang Hi-Tech Park, Pudong, Sl
201203, P. R. China
Tel: 86-21-50801919(ex.45)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Fax: 86-21-50801922
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1: hanzg@chgc.sh.cn
clone is available at CHGC
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /tissue_type="corresponding non
/dev_stage="Adult"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="GLCAJF06"
/clone_lib="GLC"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="Vector: pBluescript sk(-);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /lab_host="SOLR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       131 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     13.3%;
99.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Human Genome Center at Shanghai
Road, Zhangjiang Hi-Tech Park, Pudong, Shanghai
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 602; DB 10;
Pred. No. 4.5e-104;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       142 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Shanghai
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cancerous
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 605;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Site_1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EcoRI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  liver tissue"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Site_2:
                                                                                                                                             480
                                                                                                                                                                      480
                                                                                                                                                                                                                                                                                                                                                                   240
                                                                                                                                                                                                                                                                                                                                                                                           180
                                                                                                                                                                                                                                                                                                                                                                                                                                           120
                                               600
                                                                                                                                                                                              420
                                                                                                                                                                                                                                            360
                                                                                                                                                                                                                                                                   360
                                                                                                                                                                                                                                                                                           300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   60
                                                                                                                                                                                                                                                                                                                                          240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
```

```
RESULT 8
BI712516/c
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
VERSION
Š
                                       Вp
                                                                        QY
                                                                                                                     B
                                                                                                                                                        δÃ
                                                                                                                                                                                                 Ъ
                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                              BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
                                                                                4036
                                                                                                                                                              3976
                                                                                                                                                                                                                        3916 CATTCTGTGAGGGAGGGAAAGATTAGCCAAAGAGTTAATTTTCATTCCAAATCACTTAGC 3975
  4096 TGATATCTTGTTCTTTAAATTTTCTTCACATATGGTTTGCCTGATACAACTGATTTTTAT 4155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      source
                                         473
                                                                                                                                                                                                    593
                                                           GACATTTGTTGAGAATATTCTATTTGGTGCTCTACTGTATTTTTCTTTTTAATATCTACT 4095
                                                                                                                                          TGTTAGACTGATCTGTTTGTAGCAGTTGTTTTGTCTCATTTTTTGCTCTGTGCATTTTTTGA 4035
                                                                                                                                                                                                    CATTCTGTGAGGGAAGGATTAGCCAAAGAGTTAATTTTCATTCCAAATCACTTAGC
                                                                                                                                                                                                                                                                                586;
                                                                                                                       TGTTAGACTGATCTGTTTGTAGCAGTTGTTTGTCTCATTTTTTGCTCTGTGCATTTTTTGA 474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Fax: 01/-490 000/
Email: dmelton@biohp.harvard.edu
Library was constructed by Dr. Hiroshi Inoue DNA sequencing
Washington University Genome Sequencing Center For informati
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Endocrine Pancreas Consortium
Harvard University, Howard Hughes Medical
Dept of Molecular and Cellular Biology, 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Melton,D., Brown,J., Kenty,G., Permutt,A., Lee,C., Kaestner,K., Lemishka,I., Scearce,M., Brestelli,J., Gradwohl,G., Clifton,S., Hillier,L., Marra,M., Pape,D., Wylie,T., Martin,J., Blistain,A., Schmitt,A., Theising,B., Ritter,E., Ronko,I., Bennett,J., Cardenas,M., Gibbons,M., McCann,R., Cole,R., Tsagareishvill,R., Williams,T., Jackson,Y., and Bowers,Y.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   High quality sequence stop: Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Tel: 617-495-1812
Fax: 617-495-8557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; i
Mammalia; Eutheria; Primates; Catarrhini; Hominidae;
1 (bases 1 to 593)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BI712516
BI712516.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Contact: Douglas Melton, Klaus H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Unpublished (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Endocrine Pancreas Consortium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ie08h05.x1 HR85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BI712516
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (hinoue@im.wustl.edu)
Seq primer: -40UP from Gibco
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         02138
                                                                                                                                                                                                                                                                                                                                                                                   237
                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                         Note**Organ: Pancreas; Vector: pBluescript SK(-); Site_1: Noti; Site_2: Nhol; cDNA made by ollgo-dT priming. Size-selected on agarose gel. Average insert size -1kb. 5' XhoI site was destroyed after directional cloning. Amplified once. Contact information: Hiroshi Inoue, MD, Metabolism Div (Alan Permutt Lab), Mashington University School of Medicine, Box 8127, 660 South Euclid Ave., St. Louis, MO 63110, E-mail: hinoue@imgate.wustl.edu, Tel: 314-362-1916, Fax: 314-747-2692."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="Homo sapiens"
/db_xref="taxon:9606"
/db_xref="IMAGE:5086689"
/clone="IMAGE:5086689"
/clone_lib="HR85 islet"
/tissue_type="Purified pancreatic islet"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GI:15688211
                                                                                                                                                                                                                                                                                              12.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  islet Homo
                                                                                                                                                                                                                                                                              1
                                                                                                                                                                                                                                                                            Score 583.6; DB 13;
Pred. No. 1.4e-100;
1; Mismatches 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         430.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       đđ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Kaestner,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    mRNA lin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Institute
Divinity A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     linear
                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q٦
                                                                                                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Hiroshi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      IMAGE:5086689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        information
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ave,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EST 11-MAR-2002
                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Inoue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Cambridge,
                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                    534
                                       414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ω
`
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9
                                                                                                                                                                                                                                                                                0;
```

```
JOURNAL COMMENT
                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 9
AW961708
LOCUS
DEFINITION
ţ
                                       밁
                                                        ρ
                                                                                                                       BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                       REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                           SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                              VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                              Query Match
Best Local S
Matches 605
                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
                    1972
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4156
                                                           1912
                                                                                                                                                                                  source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               413
                                                                                       Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       53
                                        \mathbf{L}
                                      TAAAAGGATATGTTATCACTGGAATTTATTCTGAAGAAGATGTTTTGCTACTGTCAACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTACCAGCACATAGAAACATGAAATTGCTTAGTCATTGTACCTTTGTCAGCAATTTTGAC 4455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGTCATTAATGTTTGTCATAATTTTAAATAAAGTGTCTGGGTTTCAGAATAC 4507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTAAATATAGGTTGTAGTAATAAAACATCATTAGCTTAATTATTAGAAAATGCTAATTAA 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AACTGAAATTTAAGGAATCTAACAGCTAAAACTCAGTAAGTGCATMTATTTCCTTATAAC 4215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATAGACCCGTTGCTACTCTCAGCACCCTCTCCTCAATTTTTTTCCTGTAGCATGTGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AACTGAAATTTAAGGAATTTAACAGCTAAAACTCAGTAAGTGCATATATTTCCTTATAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGTCATTAATGTTTGTCATAATTTTAAATAAAGTGTCTGGGTTTCAGAATAC
         605;
                                                                                                                                                                                                                                                             Unpublished (2000)
Contact: John Quackenbush
The Institute for Genomic Research
                                                                                                                                                                                                                                                                                                                                                                           Homo
                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; 1 (bases 1 to 612)
                                                                                                                                                                                                                                                                                                                                                                                                                          AW961708 612 bp EST373781 MAGE resequences, MAGG
                                                                                                                                                                                                    Seq primer: Reverse.
                                                                                                                                                                                                                                                                                             Assessment of gene expression metastasis using a 19,200 elem
                                                                                                                                                                                                                                                                                                                         Hegde, P., Q1, R., Abernathy, K., Dharap, S., Gaspard, R., , I.E., Saeed_A.I., Sharov, V., Lee, N.H., Yeatman, T.J.,
                                                                                                                                                                                                                                                                                                                                                                                                          AW961708.1
                                                                                                                                                                                                                                                                                                                                                                                                                  AW961708
                                                                                                                                202
                                                                                                                                                                                                                                 Medical Center Dr., Rockville, 301 838 3528 301 838 0208
                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                           sapiens
                                                                                                                                                                                                              johnq@tigr.org
164
                                                                                                                            /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone_lib="MAGE resequences,
/note="Vector: pBluescriptSKm"
119 c 116 g 173 t
                                                                                                                                                                                1. .612
                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                          GI:8151392
                                                                                       12.8%;
98.9%;
                                                                             0,
                                                                             Score 581.2;
Pred. No. 4e-1
0; Mismatches
                                                                                                                                                                                                                                                                                             sion patterns
element cDNA
                                                                                       581.2; DB
No. 4e-100;
                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens cDNA,
                                                                                                                                                                                                                                                                                                                                                                                                                                     mRNA
                                                                                                                                                                                                                                                       ₹
                                                                                                 10;
                                                                                                                                                                                                                                                                                             in a model microarray
                                                                              5.
                                                                                                                                                                                                                                                                                                       a model
                                                                                                                                                                                                                                                                                                                                                       Hominidae;
                                                                                                                               2 others
                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                     linear
                                                                                                 Length
                                                                                                                                                                                                                                                                                                        of.
                                                                                                                                                                                                                                                                                                                                                                   Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                           mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                      EST 01-JUN-2000
                                                                             2;
                                                                                                                                                                                                                                                                                                        colon
                                                                                                                                                                                                                                                                                                                                                        Homo.
                                                                                                                                                                                                                                                                                                                                   Gay,C.,
                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              354
                                                                             2
                                                                                                                                                                                                                                                                                                                          RESULT 10
BG928131
LOCUS
                                                                                                                                                                                                                                                               KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                 FEATURES
                                                                                                                               COMMENT
                                                                                                                                                                                                                                                                                                                                                                            뭐
                                                                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Вp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qy
                                                                                                                                                                                                                        REFERENCE
                                                                                                                                                                                                                                                                                   VERSION
                                                                                                                                                                                                                                                                                             ACCESSION
                                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                                                                         JOURNAL
MEDLINE
                                                                                                                                                                                 TITLE
                                                                                                                                                                                                               AUTHORS
                                                                                                                                                                                                                                                       ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                               2510
                                                                                                                                                                                                                                                                                                                                                                                                                                     2452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2092
                                                                                                                                                                                                                                                                                                                                                                            601
                                                                                                                                                                                                                                                                                                                                                                                                                                                         481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                               10
```

```
B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TAATTGAAGAAAACCTTGTATTGTGGCTGAAG-AAATTAGAAGCAGGAC-TAGAAAATCA 2509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CACTGGTAAAGCAGAAATACTTGGATTCATTTACTCCATGCTGGTTAAATCTAAAGAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TATCACAATTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTGTTTTGGTGAATCTGCATTCAGGTGGCCAAGTATTTGCATTTCCTTCAGACCAGGCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTCCAGTGGGGAGAGGAATCTNGAGGGCATATTTTGATCCTCTGCCTNCCCTTCCTCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTCCAGTGGGGAGAGGAATCTTGCGGGCATATTTTGATCCTCTGCCTCCCCCTTCCTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCATCCCACTAGCTAGCACACATGCACAAGACATAGTTCAAATAATAACAGATGCACTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TATCACAATTTT 2521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TAATTGAGGAAAACCTTGTATTGTGGCTGAAGAAAATTAGAAGCAGGACTTAGAAAATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTGTTTTGGTGAATCTGCATTCAGGTGGCCAAGTATTTGCATTTCCTTCAGACCAGGCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGGAAATGTTTCCGGAAATCACTGTGGAAAATCTTCCCCAGTTATTTCAGACTTCAGAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCATCCCACTAGCACACACATGCACAAGACATAGTTCAAATAATAACAGATGCACTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AATATGCTGCAAGTCTTCCAGCCCTGCTGCTTGCCAGACACACAGAAGGCCAAAATAGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AATATGCTGCAAGTCTTCCAGCCCTGCTGCTTGCCAGACACACAGAAGGCCAAAATAGAGA 2091
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TAAAAGGATATGTTATCACTGGAATTTATTCTGAAGAAGATGTTTTGCTACTGTCAACCA
                                                                                                                 GlaxoSmithKline
709 Swedeland Road, i
Tel: 610-270-7245
Fax: 610-270-5598
Email: sanjay_kumar-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  sequence.
BG928131
BG928131.1
                                                                                                                                                                                                                                                                         sequenced tags (ESTs) each from adult human osteoarthritic cartilage cDNA libraries Osteoarthr. Cartil. 9 (7), 641-653 (2001)
                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; I
Mammalia; Eutheria; Primates; Catarrhini; Hominidae;
1 (bases 1 to 686)
                                                                                                                                                                                                                                     Contact: Sanjay Kumar
                                                                                                                                                                                                                                                       Osteoarthr. Cartil. 9
21482651
                                                                                                                                                                                                                                                                                                                                                                          Kumar,S., Connor,J.R., Dodds,R.A., Halsey,W., Van Horn,M., Mao,J.,
Sathe,G., Mui,P., Agarwal,P., Badger,A.M., Lee,J.C., Gowen,M. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BG928131
HNC65-1-B8.R.R
                                                                                                                                                                                                                    UW2109
                                                                                                                                                                                                                                                                                                                                    Identification and initial characterization
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens
                                                                                                                                                                                                                                                                                                                                                          Lark, M.W.
                                                                                                 primer:
                                                                                                                   sanjay_kumar-l@gsk.com
/organism="Homo sapiens"
/db_xref="taxon:9606"
/clone_lib="HNC (Human N
                                                          Location/Qualifiers
1. .686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   612
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HNC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (Human
                                                                                                                                                                              .
0
                                                                                                                                                                              Box 1539,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Normal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Cartilage) Homo
                                                                                                                                                                            King of Prussia,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   linear
                                                                                                                                                                                                                                                                                                                    normal and
                                                                                                                                                                                                                                                                                                                                      of 5000 expressed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               sapiens
                                                                                                                                                                              PA 19406, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EST 06-NOV-2001
Piens cDNA, mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  240
```

Normal

Cartilage)"

```
JOURNAL
MEDLINE
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                           REFERENCE
AUTHORS
                                                                                                                                               VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                  Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                    Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                            B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÕ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ρ
                                                                                                                                                                                                        LOCUS
                                                                                                                                                                                                                вм972493/с
                                                                                                                                                                                                                                                                              ρ
                                                                                                                                                                                                                                                                                                                                                     Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                      SOURCE
                                                                                                                                                                                             DEFINITION
                                                                                                                                                                       ACCESSION
                                                                  TITLE
                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3769
                                                                                                                                                                                                                                                                                    4129
                                                                                                                                                                                                                                                                                                                                                                            4009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3889
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3829
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3709
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3589 CATGTTTGAAAAAATTTTGGCTATTAAAGATATGTATTAGATGGTCTTATCCTGATTATT 3648
                                                                                                                                                                                                                                                                                                                                 4069
                                                                                                                                                                                                                                                                                                                                                                                                                         3949
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3649
                                                                                                                                                                                                                                                                                                                                                       506
                                                                                                                                                                                                                                                                                                                                                                                                  446
                                                                                                                                                                                                                                                                                                                                                                                                                                               386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       266
                                                                                                                                                                                                                                                              626
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local
                                                                                                                                                                                                                                                            GG-TTTGCCTGATACAACTGATTTTATAACTGAAATTTAAGGAA 4172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTTATATGGCTAAATTTCAGATTGAACAGGGATTCAGCATTCTGCCATCTCCTCATGGAA 3828
                                                                                                                                                                                                                                                                                                         CTCATTTTTGCTCTGTGCATTTTTTGAGACATTTGTTGAGAAATATTCTATTTGGTGCTCT 4068
                                                                                                                                                                                                                                                                                                                                                                                                            AGGACTCAGAATGATATTTATATTTTAAGTGAGTCTTAAAAACCTCCTCTTATTTCTACAA 3768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCTGGATACAACTTGATCTTTTCTAATATTTTCAGAAAGTGATGGGATAACCCTAGAAG 3708
                                                                                                                                                                                                                                                                                                                                                      CTCATTTTTGCTCTGTGCATTTTTTGAGACATTTGTTGAGAATATTCTATTTTGGTGCTCT
                                                                                                                                                                                                                                                                                                                                                                                                  AGTTGATCTCCCTGAGCCACACGGCCTCATTCTGTGAGGGAAGGGGAAAGATTAGCCAAAGA 445
                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGGACTCAGAATGATATTTATATTTTAAGTGAGTCTTAAAACCTCCTCTTATTTCTACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCTGGATACAACTTGATCTTTTCTAATATTTTCAGAAAGTGATGGGATAACCCTAGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CATGTTTGAAAAAATTTTGGCTATTAAAGATATGTATTAGATGGTCTTATCCTGATTATT 145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        581;
                                                                                                                                                                  UI-CF-EC1-abg-p-23-0-UI.sl UI-CF-EC1 Homo sapiens UI-CF-EC1-abg-p-23-0-UI 3', mRNA sequence.
                                                                                                                        Homo sapiens
                                                                                                                                                EST
                  Contact: McCray, PB
                                 97044477
                                          Genome Res. 6 (9),
                                                      discovery
                                                                             Bona
                                                                                                   Mammalia;
                                                                                                             Eukaryota;
                                                                                                                                                           вм972493.1
University of Iowa
           McCray Lab
                                                                 Normalization and subtraction:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                        (bases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               188
                                                                           ldo, M.F., Lennon, G. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /tissue_type="cartilage"
/lab_host="E.coli DH10 B"
/note="Vector: pSPORT I; Site_1:
Directional"
a 132 c 127 g 239 t
                                                                                                 Eutheria;
                                                                                      1 to 585)
                                                                                                                                                          GI:19590079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 12.6%;
99.3%;
                                          791-806 (1996)
                                                                                                  Chordata;
Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 568.2; DB
Pred. No. 1.1e-97
0; Mismatches
                                                                           Soares, M.B.
                                                                                                 Craniata; Vertebrata; Catarrhini; Hominidae;
                                                                  two
                                                                approaches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SalI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                 ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Site_2: NotI;
                                                                 facilitate
                                                                                                                                                                                           cDNA clone
                                                                                                             Euteleostomi;
                                                                                                                                                                                                       EST 21-MAR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                  505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1,
```

```
Š
                                                            밁
                                                                                                 Qy
                                                                                                                                           B
                                                                                                                                                                           Qy
                                                                                                                                                                                                                             B
                                                                                                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                     QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local
                                                                                                                                                                                        4173
                                                                                                                                                                                                                                                                                                                                                           4053
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3933 AAAGATTAGCCAAAGAGTTAATTTTCATTCCAAATCACTTAGCTGTTAGACTGATCTGTT 3992
                       4293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                                                                                                                                                                                                                                                                                                                                                                  525
                                                                                                                                                                                                                                 405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     585
TCATTTGCTTTATTTCTAATATGGGAACAATGAGAGTGAACTCTAAATATAGGTTGTAG
                                                                                    CTCAGCACCCTCTCCTCAATTTTTTTTTCCTGTAGCATGTGATGCCTGATTAAACTCATTT 4292
                                                                                                                                                                                                                                                                                                                TCTAACAGCTAAAACTCAGTAAGTGCATMTATTTCCTTATAACATAGACCCGTTGCTACT 4232
                                                                                                                                                                                                                             AATTTTCTTCACATATGGTTTGCCTGATACAACTGATTTTTATAACTGAAATTTAAGGAA 4172
                                                               CTCAGCACCCTCTCCTCAATTTTTTTTCCTGTAGCATGTGATGCCTGATTAAACTCATTT
                                                                                                                                               TCTAACAGCTAAAACTCAGTAAGTGCATATATTTCCTTATAACATAGACCCGTTGCTACT
                                                                                                                                                                                                                                                                                                                                                                                                  TGTAGCAGTTGTTTGTCTCATTTTTGCTCTGTGCATTTTTTGAGACATTTGTTGAGAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                            TGTAGCAGTTGTTTGTCTCATTTTTGCTCTGTGCATTTTTTGAGACATTTGTTGAGAATA 4052
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAAGATTAGCCAAAGAGTTAATTTTCATTCCAAATCACTTAGCTGTTAGACTGATCTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Email: paul-mccray@uiowa.edu
Tissue Procurement: Dr. M. J. Welsh, University of Iowa
cDNA Library preparation: Dr. M. Bento Soares, University of
cDNA Library Arrayed by: Dr. M. Bento Soares, University of
DNA Sequencing by: Dr. M. Bento Soares, University of Iowa
Clone Distribution: Researchers may obtain clones from Rese
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2024 University of Tel: 319 356 4866 Fax: 319 356 7171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Genetics (www.resgen.com).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Seq primer: M13 FORWARD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /dev_stage="Adult and Fetal"
//dev_stage="Adult and Fetal"
//lab_host="DH10B (Life Technologies) (Tl phage resistant)"
//note="Organ: Lung; Vector: pT773-Pac (Pharmacia) with a
modified polylinker; Site_1: EcoR I; Site_2: Not I;
UI-CF-EC1 is a normalized cDNA library containing the
following tissue(s): Normal lung from adult and from fetal
day 64, day 87, week 19 and week 42. The library was
constructed according to Bonaldo, Lennon and Soares,
Genome Research, 6:791-806, 1996. First strand cDNA
synthesis was primed with an oligo-dT primer containing a
Not I site. Double stranded cDNA was ligated to an EcoR I
adaptor, digested with Not I, and cloned directionally
into pT773-Pac vector. The oligonucleotide used to prime
the synthesis of first-strand cDNA contains a library tag
sequence that is located between the Not I site and the
(dT)18 tail. The sequence tag for this library is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     and 380-383
TAG_SEQ=AAGTGCTTAC"
a 83 c 92 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TAG_TISSUE-Normal Lung
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TAG_LIB=UI-CF-EC1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAGTGCTTAC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /clone="UI-CF-EC1-abq-p-23-0-UI"
/clone_lib="UI-CF-EC1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /tissue_type="Lung"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /db_xref="taxon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         12.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Iowa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 567; DB 1
Pred. No. 2e-97;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Med Labs,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Epithelial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Iowa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 City,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Cells
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    IA 52242,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         of Iowa
University of Iowa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Tissue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    nos 369-371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Research
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        of Iowa
                                                                                                                                                                                                                                                                                                                                                                                                    466
                                                               226
                                                                                                                                               286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
```

```
RESULT 12
AL040840/c
LOCUS
18
                                                Q
                                                                                      밁
                                                                                                                   QΥ
                                                                                                                                                           Дb
                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                   BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ър
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KEYWORDS
                                                                                                                                                                                                                              Best Local Si
Matches 563;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
                                                      4030
                                                                                                                         3970
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4353
                                                                                                                                                                           3910 CGGCCTCATTCTGTGAGGGAGGGAAAGATTAGCCAAAGAGTTAATTTTCATTCCAAATCA 3969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         source
                  444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               45
                                                                                                                                                                                                                                                Local Similarity
                  CTTAGCTGTTAGACTGATCTGTTTGTAGCAGTTGTTTGTCTCATTTTTGCTCTGTGCATT 4029
                                                                                                                                                           CGGCCTCATTCTGTGAGGGAGGGGAAAGATTAGCCAAAGAGTTAATTTTCATTCCAAATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATAATTTTAAATAAAGTGTCTGGGTTTCAGAATACCTTCAAAAAA 4517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CATGAAATTGCTTAGTCATTGTACCTTTGTCAGCAATTTTTGACAGTCATTAATGTTTGTC 4472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TAATAAAACATCATTAGCCTAATTATTAGAAAATGCTAATTAAGTACCAGCACATAGAAA 4412
                                                                                      CTTAGCTGTTAGACTGATCTGTTTGTAGCAGTTGTTTTGTCTCATTTTTGCTCTGTGCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CATGAAATTGCTTAGTCATTGTACCTTTGTCAGCAATTTTGACAGTCATTAATGTTTGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TAATAAAACATCATTAGCCTAATTATTAGAAAATGCTAATTAAGTACCAGCACATAGAAA 106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCATTTGCTTTTATTTCTAATATGGGAACAATGAGAGTGAACTCTAAATATAGGTTGTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Clone from S. Wiemann, Molecular Genome Analysis, German Cancer Research Center (DKFZ); Email s.wiemann@dkfz- heidelberg.de; sequenced by GBF (National Research Centre for Biotechnology Ltd., Braunschweig/Germany) within the cDNA sequencing consortium of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AL040840 RRNA 564 bp mRNA DKFZP434F0915_s1 434 (synonym: htes3) Homo DKFZP434F0915 3', mRNA sequence.
AL040840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            This clone (DKFZp434F0915) is available at the RZPD in Please contact the RZPD: Ressourcenzentrum, Heubnerweg Berlin-Charlottenburg, GERMANY; Email: clone@rzpd.de.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Am Klopferspitz 18a D-82152 Martinsried, Germany This is the 3' sequence of the clone insert
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Contact: Bloecker H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Wiemann,S.
EST (Bloed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bloecker, H., Boecher, M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  No r1 sequence available
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  German Genome Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AL040840.1 GI:5409785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (bases 1 to 564)
                                                                                                                                                                                                                                                                                                                     221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (Bloecker, et al.)
                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ished (1999)
                                                                                                                                                                                                                                                                                                                              /clone="DKF2p434F0915"
/clone_lib="434 (synonym: htes3)"
/tissue_type="testis"
/dev_stage="adult:
/lab_host="DH108"
/note="Vector: pSport1; Site_1: Nc
                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        arlottenburg, GERMANY;
Location/Qualifiers
                                                                                                                                                                                                                                              12.5%;
                                                                                                                                                                                                                                                                                                                       C
                                                                                                                                                                                                                                              Score 563.6;
Pred. No. 8.8
                                                                                                                                                                                                                                                                                                                   pSport1; Site_1: NotI;
95 g    160 t
                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Brandt, P.,
                                                                                                                                                                                                                         3.8e-97;
0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mewes, H.W.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Hominidae;
                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                             Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    sapiens cDNA clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        linear
                                                                                                                                                                                                                                                                                                                                     Site_2: SalI"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gassenhuber,J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EST 29-FEB-2000
                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6
                                                                                     445
                                                                                                                                                           505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      166
                                                                                                                                                                                                                                ġ.
```

```
RESULT 13
BE895218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
 BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    рь
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Snoo
                                                                                                                                                                                                                                                                                                                                                                                                                              AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4090
                                                                                                                                                                                         source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTTGACAGTCATTAATGTTTGTCA 4473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCTACTTGATATCTTGTTCTTTAAATTTTCTTCACATATGGTTTGCCTGATACAACTGAT 4149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ARTTAAGTACCAGCACATAGAAACATGAAATTGCTTAGTCATTGTACCTTTGTCAGCAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTTTATAACTGAAATTTAAGGAATCTAACAGCTAAAACTCAGTAAGTGCATMTATTTCCT 4209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCTACTTGATATCTTGTTCTTTAAATTTTCTTCACATATGGTTTGCCTGATACAACTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AATTAAGTACCAGCACATAGAAACATGAAATTGCTTAGTCATTGTACCTTTGTCAGCAAT 4449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGAACTCTAAATATAGGTTGTAGTAATAAAACATCATTAGCCTAATTATTAGAAAATGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGAACTCTAAATATAGGTTGTAGTAATAAAACATCATTAGCCTAATTATTAGAAAATGCT 4389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTGATGCCTGATTAAACTCATTTTCATTTGCTTTTATTTCTAATATGGGAACAATGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTTTATAACTGAAATTTAAGGAATCTAACAGCTAAAACTCAGTAAGTGCATATATTTCCT
                                                                                                                                                                                                                                                                                                                                                         Contact: Robert Strausberg, Ph.D. Email: cgapbs-r@mail.nih.gov Tissue Procurement: ATCC/DCTD/DTP
                                                                                                                                                                                                                      found through the I.M.A.G.E. Consortium/LLNL http://image.llnl.gov plate: LLAM9747 row: 1 column: 14 High quality sequence stop: 557.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BE895218 900 bp m 601433654F1 NIH_MGC_72 Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                              NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BE895218.1
EST.
                                                                                                                                                                                                                                                                                                                                                                                                                Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BE895218
                                                                                                                                                                                                                                                                                         CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (bases 1 to 900)
   252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    sequence.
                     /tissue_type="melanotic melanoma"
/lab_host="DH10B (phage-resistant)"
/note="Organ: skin; Vector; pCMV-SPORT6; Site_1: Not1;
Site_2: Sal1; Cloned unidirectionally. Primer: Oligo
Average insert size 2 kb. Library constructed by Lif
Technologies."
Technologies.
                                                                                                                 /clone="IMAGE:3918877"
/clone_lib="NIH_MGC_72"
                                                                                                                                                    /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                      Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GI:10358391
9
   315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cDNA clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        linear
   others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ear EST 20-OCT-2000
IMAGE:3918877 5',
                                 Oligo dT.
by Life
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        325
```

12

Score

562;

DB

12;

Length 900

```
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                      RESULT 14
BF790996
                                                                                                                                                                          VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                          ₽
                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qy
                                                       COMMENT
                                                                                                                                                                                                                                          LOCUS
                                                                                                                                                                                                                            DEFINITION
                                                                                                                                                                                                     ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Best Local Similarity Matches 645; Conserv
                                                                                                                                                 ORGANISM
                                                                                                                                                                                                                                                                                                                                    4312
                                                                                                                                                                                                                                                                                                                                                                                        4252
                                                                                                                                                                                                                                                                                                                                                                                                                                          4192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4072
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3952
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3892
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3832
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3652 TGGATACAACTTGATCTTTTCTAATATTTTCAGAAAGTGATGGGATAACCCCTAGAAGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                          651
                                                                                                                                                                                                                                                                                                                                                                                                                540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 TGGATACAACTTGATCTTTTCTAATATTTTCAGAAAGTGATGGGATAACCCTAGAAGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                           TAAGTGCATMTATTTCCTTATAACATAGACCCGTTGCTACTCTCAGCACCCCTCTCCTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTGCCTGATACAACTGATTTTATAACTGAAATTTAAGGAATCTAACAGCTAAAACTCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACTCAGAATGATATTTATATTTTAAGTGAGTCTTAAAACCTCCTCTTATTTCTACAAGTT
                                                                                                                                                                                                                                                                                                                      ATATGGGAACAATGAGAGTGAACTCTAAATATAGGTTGTAGTAATAAAACAT 4363
                                                                                                                                                                                                                                                                                                                                                            GTATTTTTCTTTTAATATCTACTTGATATCTTGTTCTTTAAATTTTCTTCACATATGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTATTTTTCTTTTAATATCTACTTGATATCTTGTTCTTTAAATTTTTCTTCACATATGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATTTTTGCTCTGTGCATTTTTTGAGACATTTTGTTGAGAATATTCTATTTGGTGCTCTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAGGCTCCCTCATCTGAAGCGTCTCTGAAATCTACCCTTGCAAGCCTTCAGACAAATCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATATGGCTAAATTTCAGATTGAACAGGGATTCAGCATTCTGCCATCTCCTCATGGAAAGA
                                                                                                                                                                                                                                                                                                          TTTTTTTTCCTGTAGCATGTGATGCCTGATTAAACTCATTTTCATTTGCTTTTATTTCTA
                                                                                                                                                                                                                                                                                                                                                                                                               TAAGTGCATATATTTCCTTATAAATAGAACCGTTGGTATCTCAGA----CCTCTTCTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATTTTTGCTCTGTGCATTTTTTGAGACATTTGTTGAGAATATTCTATTTGGTGCTCTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATATGGCTAAATTTCAGATTGAACAGGGATTCAGCATTCTGCCATCTCCTCATGGAAAGA
                                                                                                                                                                         mRNA sequence.
BF790996
BF790996.1 GI:
EST.
Tissue Procurement: CLONETECH Laboratories, Inc. cDNA Library Preparation: CLONETECH Laboratories, I cDNA Library Arrayed by: The I.M.A.G.E. Consortium
                                        Contact: Robert Strausberg, Ph.D Email: cgapbs-r@mail.nih.gov
                                                                Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; 1 (bases 1 to 695)
NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collect Unpublished (1999)
                                                                                                                                                                                                                           BF790996
602251048F1 NIH_MGC_81
                                                                                                                                               Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        . 68;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pred. No. 1.6e-96;
1; Mismatches 56;
                                                                                                                                                                                                                              Homo
                                                                                                                                                                                                                            sapiens
                                                                                                                                                                                                                                         dq
                                                                                                                                                                                                                                          mRNA
                                                                                                                                                                                                                            CDNA
                                                                                                                                                                                                                        linear EST 12-JAN-2001 clone IMAGE:4338659 5',
                                                                                                                      Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                               Collection
              Inc
  (LLNL)
                                                                                                                                  Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                               (MGC)
                                                                                                                                                                                                                                                                                                                                                                                      4311
                                                                                                                                                                                                                                                                                                                                                                                                                                         4251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4011
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3891
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3831
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3771
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3951
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3711
                                                                                                                                                                                                                                                                                                                                                              650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BASE COUNT
ORIGIN
                                                                                                                  Ş
              δÃ
                                        뫄
                                                                δ.
                                                                                           밁
                                                                                                                                             밁
                                                                                                                                                                       Š
                                                                                                                                                                                                  맑
                                                                                                                                                                                                                          Ωy
                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                             Qγ
                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                     δã
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
              4121
                                                                                                                                                                                                                                                                                                                                   3761
                                                                                                                      4001
                                                                                                                                                                         3941
                                                                                                                                                                                                                                                                                3821
                                                                                                                                                                                                                                                                                                                                                                                      3702
                                                                                                                                                                                                                                                                                                                                                                                                                                       3642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               source
                                                                                                                                                                                                                            3881
                                                                                            479
                                                                                                                                                420
                                                                                                                                                                                                  360
                                                                                                                                                                                                                                                      300
                                                                                                                                                                                                                                                                                                         240
                                                                                                                                                                                                                                                                                                                                                            180
                                                                                                                                                                                                                                                                                                                                                                                                               120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     <u>,...</u>
 TCACATATGGTTTGCCTGATACAACTGATTTTTATAACTGAAATTTAAGGAATCTAACAG
                                                      GGTGCTCTACTGTATTTTTCTTTTTAATATCTACTTGATATCTTGTTCTTTAAATTTTTCT
                                                                                                       TTGTTTTGTCTCATTTTTTGCTCTGTGCATTTTTTTGAGACATTTGTTGAGAATATTCTATTT
                                                                                                                                                                                                 TCATGGAAAGAGAGGCTCCCTCATCTGAAGCGTCTCTGAAATCTACCCTTGCAAGCTTCA
                                                                                                                                                                                                                                                                                                       GATTATTACCTGGATACAACTTGATCTTTTCTAATATTTTCAGAAAGTGATGGGATAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CACGTATCATGTTTGAAAAAATTTTTGGCTATTAAAGATATGTATTAGATGGTCTTATCCT 3641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TAACCTTGTGTTAAAAGTAACCTGTGGCAGACTAGGTTTCCAGAATTTCCTGGTTCTGCT 60
                                                                                            TAGTAGGTCTCATTTATGCTCTGTGCATTTATTGAGACCATTG
                                                                                                                                                GCCAAAGAGTTAATTTTCATTCCAAATCACTTAGCTGTTAGACTGATCTG-TAGTAGCAG
                                                                                                                                                            GCCAAAGAGTTAATTTTCATTCCAAATCACTTAGCTGTTAGACTGATCTGTTTGTAGCAG
                                                                                                                                                                                                                                                                                                                                 TTCTACAAGTTATATGGCTAAATTTCAGATTGAACAGGGATTCAGCATTCTGCCATCTCC
                                                                                                                                                                                                                                                                                                                                                            CTAGCAAGAGGACTCAGAATGATATCTATATTTTAAGTGAGTCTTAAAAACCTCCTCTTAT
                                                                                                                                                                                                                                                                                                                                                                                     CTAG-AAGAGGACTCAGAATGATATTTATATTTTAAGTGAGTCTTAAAACCTCCTCTTAT
                                                                                                                                                                                                                                                                                                                                                                                                               GATTATTACCTGGATACAACTTGATCTTTTCTAATATTCTCAGAAAGTGATGGGATAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CACGTATCATG-TTGAAAAAATTTGGGCTATTAAAGATATGTATTAGATGGTCTTATCCT
                                        GGTGCTCTACTGTATGTCACTTTTGAATATCTACTTGATAATCTGTACTTTAAATTTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      641;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        199
```

4120

597

4060

537

4000

478

3880

359

3820

299

3760

239

3701

119

179

```
Query Match
Best Local Similarity
TAACCTTGTGTTAAAAGTAACCTGTGGCAGACTAGGTTTCCAGAATTTCCTGGTTCTGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information
found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
plate: LLCM1214 row: o column: 12
                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             quality sequence stop:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     and 3' adaptor sequence:
5'-ATTCTAGAGGCCGAGGCGGCGACATG-dT(30)BN-3' (where B = A, 5'-ATTCTAGAGGCTGAGCGGCGCGACATG-dT(30)BN-3' (where B = A, C, G, or T). Average insert size
1.55 kb (range 1.0-4.0 kb). 15/15 colonies contained
1.55 kb (range 1.0-4.0 kb). 15/15 colonies contained
1.55 kb (range 1.0-4.0 kb). 15/15 colonies contained
1.50 kb (range 1.0-4.0 kb). 15/15 colonies contained
1.51 kb (range 1.0-4.0 kb). 15/15 colonies contained
1.52 kb (range 1.0-4.0 kb). 15/15 colonies contained
1.53 kb (range 1.0-4.0 kb). 15/15 colonies contained
1.55 kb (range 1.0-4.0 kb). 15/15 colonies contained
1.55 kb (range 1.0-4.0 kb). 15/15 colonies contained
1.56 kb (range 1.0-4.0 kb). 15/15 colonies contained
1.57 kb (range 1.0-4.0 kb). 15/15 colonies contained
1.58 kb (range 1.0-4.0 kb). 15/15 colonies contained
1.59 kb (range 1.0-4.0 kb). 15/15 colonies contained
1.50 kb (range 1.0-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (Clontech); Site_1: SfiI (ggccgcctcggcc); Site_2: SfiI (ggccattatggcc); 5' and 3' adaptors were used in cloning as follows: 5' adaptor sequence: 5'-CACGGCCATTATGGCC-3'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /lab_host="DH10B (T1 phage-resistant)"
/note="organ: muscle (skeletal); Vector: pDNR-LIB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /clone="IMAGE:4338659"
/clone_lib="NIH_MGC_81"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1. .695
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          134 c
                                                                                                                                                                                                                               12.3%;
                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                              130 g
                                                                                                                                                                                                                               Score 556.4; DE Pred. No. 2e-95;
                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          232 t
                                                                                                                                                                                                                                                                                      DB 12;
                                                                                                                                                                       31;
                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                       6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        can
                                                                                                                                                                       Gaps
                                                 3581
                                                                                                                                                                       6,
```

```
SOURCE
ORGANISM
1 8
                                                                                                         멍
                                                                                                                                                                   Qy
                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                             Q
                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 15
AW665394/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         뮹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
                                            4193
                                                                                                                                                                                                                                                                                                          4073
                                                                                                                                                                                                                                                                                                                                                                                                                                           4013
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4181 CTAAAACTCAGTAAGTGC 4198
|||||||||||||| | | |
656 CTAAAACTCAGTAGGGGC 673
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            556
                                                                                                                                                                                                                                             436
                                                                                                                                                                                                                                                                                                                                                                           496
                                                                                                                376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      598
                                        AAGTGCATMTATTTCCTTATAACATAGACCCGTTGCTACTCTCAGCACCCTCTCCTCAAT 4252
                                                                                                                                       TGCCTGATACAACTGATTTTTATATAACTGAAATTTAAGGAATCTAACAGCTAAAACTCAGT 4192
                                                                                                                                                                                                                                                                            TATTTTTCTTTTAATATCTACTTGATATCTTGTTCTTTAAATTTTCTTCACACATATGGTT 4132
                                                                                                                                                                                                                                                                                                                                                                                                          TTTTTGCTCTGTGCATTTTTTGAGACATTTGTTGAGAATATTCTATTTGGTGCTCTACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATTTTCATTCCAAATCACTTAGCTGTTAGACTGATCTGTTTGTAGCAGTTGTTTTGTCTCA 497
                                                                                                         TGCCTGATACAACTGATTTTATAACTGAAATTTAAGGAATCTAACAGCTAAAACTCAGT
                                                                                                                                                                                                                                          TATTTTTTTTTAATATCNACTTGATATCTTGTTCTTTAAATTTTCTTCACATATGGTT
                                                                                                                                                                                                                                                                                                                                                                           TTTTTGCTCTGTGCATTTTTTGAGACATTTGTTGAGAATATTCTATTTGGTGCTCTACTG 437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCAATTATGGCTTGCCTGATA-AACTGGATTCTATAACTGGAATCTCAGGAAT-TAACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   hi90c01.x1 Soares_NFL_T_GBC_S1 Homo sapiens cDNA clone IMAGE:9979552 3', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Email: cgapbs-r@mail.nih.gov
This clone is available royalty-free through LLNL; contact the
IMAGE Consortium (info@image.llnl.gov) for further information.
Seq primer: -40UP from Gibco
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Contact: Robert Strausberg, Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Unpublished (1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 556)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NCI-CGAP http://www.ncbi.nlm.nih.gov/ncicgap.
National Cancer Institute, Cancer Genome Anatomy Project (CGAP),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AW665394.1 GI:7457940
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          quality sequence stop: 462.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="Driver | Private | 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gene Index
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /db_xref="taxon:9606"
/clone="IMAGE:2979552"
/clone_lib="Soares_NFL_T_GBC_S1"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     12.2%;
99.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 552.6; DB 10;
Pred. No. 1.1e-94;
1; Mismatches 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      06-APR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                         317
                                                                                                                                                                                                                                          377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0,
```

밁 Qy В Š В δÃ DЬ QΥ В Qy Вb 4373 4253 4493 TGGGTTTCAGAATA 4506 4313 136 16 AATTATTAGAAAATGCTAATTAAGTACCAGCACATAGAAACATGAAATTGCTTAGTCATT 4432 TTTTTTTCCTGTAGCATGTGATGCCTGATTAAACTCATTTCATTTGCTTTATTTCTAA TGGGTTTCAGAATA TTTTTTTCCTGTAGCATGTGATGCCTGATTAAACTCATTTTCATTTGCTTTTATTTCTAA 4312 4492 197 257

Search completed: March 22, 2003, 10:47:45
Job time: 6639 secs

```
Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Searched:
         A_Geneseq_101002:*

1: /SIDS1/gcgdata/ge
2: /SIDS1/gcgdata/ge
3: /SIDS1/gcgdata/ge
4: /SIDS1/gcgdata/ge
5: /SIDS1/gcgdata/ge
6: /SIDS1/gcgdata/ge
6: /SIDS1/gcgdata/ge
7: /SIDS1/gcgdata/ge
8: /SIDS1/gcgdata/ge
9: /SIDS1/gcgdata/ge
10: /SIDS1/gcgdata/ge
11: /SIDS1/gcgdata/g
12: /SIDS1/gcgdata/g
13: /SIDS1/gcgdata/g
14: /SIDS1/gcgdata/g
15: /SIDS1/gcgdata/g
16: /SIDS1/gcgdata/g
17: /SIDS1/gcgdata/g
18: /SIDS1/gcgdata/g
19: /SIDS1/gcgdata/g
20: /SIDS1/gcgdata/g
20: /SIDS1/gcgdata/g
21: /SIDS1/gcgdata/g
22: /SIDS1/gcgdata/g
23: /SIDS1/gcgdata/g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     March 13, 2003, 17:10:12; Search time 39 Seconds (without alignments) 2757.263 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-847-046-2
4142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 908470 seqs, 133250620 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 MFSGFNVFRVGISFVIMCIF.....FKEAEKSFRRDKELGCSKVN 807
                                                                                                                                    | SIDSI/gcgdata/geneseq/geneseqp-embl/AAI985.DAT: *
| SIDSI/gcgdata/geneseq/geneseqp-embl/AAI986.DAT: *
| SIDSI/gcgdata/geneseq/geneseqp-embl/AAI986.DAT: *
| SIDSI/gcgdata/geneseq/geneseqp-embl/AAI987.DAT: *
| SIDSI/gcgdata/geneseq/geneseqp-embl/AAI989.DAT: *
| SIDSI/gcgdata/geneseq/geneseqp-embl/AAI999.DAT: *
| SIDSI/gcgdata/geneseq/geneseqp-embl/AAI999.DAT: *
| SIDSI/gcgdata/geneseq/geneseqp-embl/AAI99.DAT: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GenCore version 5.1.4_p5_4578 Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1980.DAT:*
/SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1981.DAT:*
/SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1982.DAT:*
/SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1983.DAT:*
/SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1983.DAT:*
/SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1983.DAT:*
/SIDS1/gcgdata/geneseq/geneseqp-emb1/AA2000.DAT:*
/SIDS1/gcgdata/geneseq/geneseqp-emb1/AA2001.DAT:*
/SIDS1/gcgdata/geneseq/geneseqp-emb1/AA2002.DAT:*
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.		Query Match Length DB	Length	DB .	ID	Description
1	4142	100.0	807	23	ABG61812	Prostate cancer-as
2	1839	44.4	357	22	AAB94073	Human protein sequ
ω	185	4.5	485	15	AAR49829	Highly heat-
4	185	4.5	505	16	AAR73963	Humicola insolens
5	180	4.3	505	15	AAR63807	Protein disulphide
9	177	4.3	496	22	ABB62855	Drosophila m
7	175.5	4.2	505	16	AAR82801	Bovine phospholipa
8	172.5	4.2	511	16	AAR69506	Aspergillus sp. re
9	172.5	4.2	515	16	AAR69504	Aspergillus
10	172.5	4.2	515	22	AAB49946	A. oryzae protein

40	h 4	A .	43	42	41	40	39	38	37									28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11
133) L	יני	135	135	135	135	135	135	135	135.5	136	136	136	136	136	138	138.5	138.5	138.5	139	141.5	*	146.5	148.5	150		153.5	155	164	166.5	166.5	169.5	169.5	٠	
0.0				٠	ω . ω	٠	٠	٠	3.3	ω.	ω	ω	ω	ω.	ω.	ω	ω				3.4	3.5	٠		3.6	3.7		3.7	4.0	4.0	4.0	4.1	4.1	4.1	4.1
213	100	202	508	508	497	491	472	468	460	510	1579	495	495	470	466	522	646	645	416	496	491	918	492	491	579	526	489	450	454	515	505	549	544	515	515
) i	7	13	9	23	13	23	23	21	9	23	23	19	23	23	19	22	22	22	21	21	22	23	21	21	13	21	22	22	16	16	23	21	22	22
AAGOOOGO	TAXOLOGO C	AAB51606	AAR25297	AAP80664	AAG66111	AAR25296	AAG66113	AAG66107	AAG41950	AAP80615	ABB91088	ABG61000	AAW70270	ABG61002	ABG60996	AAW69726	AAU30243	AAG66531	ABB58589	AAY70762	AAY70769	AAU30491	ABB07836	AAY70770	AAG41949	AAR26174	AAY70766	AAB49944	AAB49936	AAR69505	AAR70329	ABP41717	AAB43424	AAB82539	AAE12991
Animo acid sequenc	TOP TOP OF	דום מ		Polypeptide with p	D. immitis transgl	¢	D. immitis transgl	D. immitis transgl	Arabidopsis thalia	_	Herbicidally activ		Dirofilaria immiti		Dirofilaria immiti	Saccharomyces cere	Novel human secret	Human interferon-a	Drosophila melanog	Spider protein dis	Scorpion protein d	Novel human secret	Human protein iden	Scorpion protein d	Arabidopsis thalia	=	Spider protein dis	Protein disulfide	ť	Aspergillus sp. re	Human phospholipas	Human ovarian anti	Human cancer assoc.	Human protein disu	Human protein disu

ALIGNMENTS

XX XX	PR	XX	ΡF	×	PD	×	ΡN	XX	SO	XX	×Σ	××	DE	×	ΡŢ	XX	AC	XX	ID	ABG	RES									
(EOSB-) EOS BIOTECHNOLOGY INC.	04-MAY-2001; 2001US-288589P.	30-APR-2001; 2001US-0847046.	24-APR-2001; 2001US-286214P.	06-APR-2001; 2001US-281922P.	16-MAR-2001; 2001US-276888P.	16-MAR-2001; 2001US-276791P.	24-JAN-2001; 2001US-263957P.	08-DEC-2000; 2000US-0733742.	08-DEC-2000; 2000US-0733288.	13-OCT-2000; 2000US-0687576.		12-OCT-2001; 2001WO-US32045.		18-APR-2002.		WO200230268-A2.		Mammalia.		Prostate cancer; prostate tumour tissue; human; mammal; cytostatic.		Prostate cancer-associated protein #13.		15-AUG-2002 (first entry)		ABG61812;		ABG61812 standard; Protein; 807 AA.	ABG61812	ULT 1

```
Query Match
Best Local S
Matches 807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    to them. The prostate cancer-associated polynucleotide sequences are differentially expressed in prostate tumour tissue or in prostate cancer and are derived from the tissues of various organisms such as humans or other mammals (e.g. mice, sheep and dogs The methods of the invention are useful for diagnosing and treating prostate cancer in mammals. The prostate cancer associated genes are useful for diagnosing or treating prostate cancer, as well as for identifying modulators of prostate cancer or agents that inhibit prostate cancer. The nucleic acid sequences are particularly useful in gene therapy, as a vaccine or in antisense applications. ABG61800-ABG61944 represent prostate cancer-associated proteins.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The present invention relates to methods of detecting a prostate cancer associated transcript in a cell from a patient. The method comprises contacting a biological sample from the patient with prostate cancer associated polynucleotides (designated PC genes) that selectively hybridise to a sequence that is at least 80% identical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              are
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Detecting a prostate cancer-associated transcript in a cell in a patient, useful for diagnosing prostate cancer (PC) or screening modulators of PC, by determining if prostate cancer-associated g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Claim
                       541
                                                               481
                                                                                                       481
                                                                                                                                               421
                                                                                                                                                                                     421
                                                                                                                                                                                                                               361
                                                                                                                                                                                                                                                                     361
                                                                                                                                                                                                                                                                                                             301
                                                                                                                                                                                                                                                                                                                                                    301
                                                                                                                                                                                                                                                                                                                                                                                              241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  expressed in a prostate tissue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      YPVNITSIQEAEEYLSGELYKDLILYSSVSVLGLFSPTMKTAKEDFSEAGNYLKGYVITG
                                                                                                                                                                                                                             TVFRDRKRKLPLELTVELTEETFNATVMASDSIVLFYAGWQAVSMAFLQSYIDVAVKLKG
                                                                                                                                                                                                                                                                                                           ANVVFKRAEEGVPVEFLVLHDVDLIISHVENNMHIEEIQEDEDNDMEGPDIDVQDDEVAE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KYITNLEDLQNIENALKGKANIIFSYVRAIGIPEHRAVMEAGFVYGTTYQFVLTTEIALL
                   IYSEEDVLLLSTKYAASLPALLLARHTEGKIESIPLASTHAQDIVQIITDALLEMFPEIT
                                                                                                                                             TSTMLLTRINCADWSDVCTKQNVTEFFIIKMYKKGENPVSYAGMLGTKDLLKFIQLNRIS
                                                                                                                                                                                                                                                                                                                                                                                                               PQQVSTVHLQLGLPLVFIVSQQATYEADRRTAEWVAWRLLGKAGVLLLLRDSLEVNIPQD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ESIGSEDVEYAHLYFFHCKLVLDLTQQCRRTLMEQPLTTLNIHLFIKTMKAPLLTEVAED
PQQVSTVHLQLGLPLVFIVSQQATYEADRRTAEWVAWRLLGKAGVLLLLRDSLEVNIPQD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ESIGSEDVEYAHLYFFHCKLVLDLTQQCRRTLMEQPLTTLNIHLFIKTMKAPLLTEVAED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KYITNLEDLQNIENALKGKANIIFSYVRAIGIPEHRAVMEAGFVYGTTYQFVLTTEIALL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       al Similarity
807; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mack
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DH,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Wilson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KE,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 4142;
Pred. No. 0;
Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Afar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Hevezi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DВ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       genes are
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               genes
                                                                                                     540
                                                                                                                                             480
                                                                                                                                                                                   480
                                                                                                                                                                                                                             420
                                                                                                                                                                                                                                                                   420
                                                                                                                                                                                                                                                                                                                                                                                                                                  300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
```

В Š

Ş В δÃ 밁 Ş 밁 ð В δ В Š В δÃ д Š 밁 δÃ

The present invention describes primer sets for synthesising 5602 full-length cDNAs defined in the specification. Where a primer set comprises: (a) an oligo-dT primer and an oligonucleotide complementary to the complementary strand of a polynucleotide which comprises one of the 5602 nucleotide sequences defined in the specification, where the oligonucleotide comprises at least 15 nucleotides; or (b) a combination of an oligonucleotide comprising a sequence complementary to the complementary strand of a polynucleotide which comprises a 5'-end sequence and an oligonucleotide comprising a sequence, where the oligonucleotide which comprises a 3'-end sequence, where the oligonucleotide which comprises a 1 least 15 nucleotides and the combination of the 5'-end sequence/3'-end sequence is selected from those defined in the specification. The primer sets can be used in antisense therapy and

gene

therapy.

The

primers

useful

polynucleotides

Claim 8;

SEQ

ID 14262;

2537pp +

CD ROM;

English

detection by the

full-length cDNAs define and/or diagnosis of the full-length cDNAs -

```
RESULT 2
AAB94073
ID
AAB94073
XX
AAB94073
XX
AAB94073
AX
AAB94073
AX
AAB94073
AX
AAB94073
AX
AAB94073
AX
AAB94073
AAB9407
AAB9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         멂
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    29-JUL-1999;
27-AUG-1999;
11-JAN-2000;
02-MAY-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Primer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        07-FEB-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAB94073
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          28-JUL-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EP1074617-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            26-JUN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (HELI-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WKPPLPAYDFLSMIDAATSQRGTRKVPKCMKETDVQENDKEQHEDKSAVRKEPIETLRIK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HWNRSNWFKEAEKSFRRDKELGCSKVN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HWNRSNWFKEAEKSFRRDKELGCSKVN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RAYFDPLPPLPLLVLVNLHSGGQVFAFPSDQAIIEENLVLWLKKLEAGLENHITILPAQE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VENLPSYFRLQKPLLILFSDGTVNPQYKKAILTLVKQKYLDSFTPCWLNLKNTPVGRGIL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VENLPSYFRLQKPLLILFSDGTVNPQYKKAILTLVKQKYLDSFTPCWLNLKNTPVGRGIL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IYSEEDVLLLSTKYAASLPALLLARHTEGKIESIPLASTHAQDIVQIITDALLEMFPEIT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WKPPLPAYDFLSMIDAATSQRGTRKVPKCMKETDVQENDKEQHEDKSAVRKEPIETLRIK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RAYFDPLPLLVLVNLHSGGQVFAFPSDQAIIEENLVLWLKKLEAGLENHITILPAQE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ŝ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sets
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            primer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Isogai T,
, Sugiyama
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HELIX RES INST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                        for synthesizing cDNAs defined in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              99JP-0248036.
99JP-0300253.
2000JP-0118776.
2000JP-0183767.
2000JP-0241899.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2000EP-0116126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sequence SEQ ID NO:14262.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            detection; diagnosis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Nishikawa
T, Wakama
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Wakamatsu
                                                                                                                                                                                                                                                                                                                                                                                                                                izing polynucleotides, particularly the ed in the specification, and for the det abnormality of the proteins encoded by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Hayashi K,
A, Nagai K,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 antisense
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Saito K,
, Otsuki
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            therapy; gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Yamamoto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             780
```

```
RRESULT 3
AAR49291
ID AAR44
XX AAR44
XX AAR4
XX Prot
XX Prot
XX Prot
XX Prot
XX JP06
X
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local S
Matches 356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  particularly full-length cDNAs. The primers are also useful for the detection and/or diagnosis of the abnormality of the proteins encoded by the full-length cDNAs. The primers allow obtaining of the full-length cDNAs easily without any specifalised methods. AAH03166 to AAH13628 and AAH3633 to AAH18742 represent human cDNA sequences; AAB92446 to AAB95893 represent human amino acid sequences; and AAH13629 to AAH13632 represent oligonucleotides, all of which are used in the exemplification of the present invention.
                                                                                    Novel protein di:sulphide isomerase active the production of 3-D active proteins
                                                                                                                                                             WPI;
                                              Claim
                                                                                                                                                                                                     (TOYA ) TOYAMA
                                                                                                                                                                                                                                               27-MAY-1992;
                                                                                                                                                                                                                                                                                            04-MAR-1993;
                                                                                                                                                                                                                                                                                                                                           15-FEB-1994
                                                                                                                                                                                                                                                                                                                                                                                       JP06038752-A
                                                                                                                                                                                                                                                                                                                                                                                                                                  Humicola insolens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              catalysis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Highly heat-resistant protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             29-SEP-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAR49829;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAR49829
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               451 MYKKGENPVSYAGMLGTKDLLKFIQLNRISYPVNITSIQEAEEYLSGELYKDLILYSSVS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               751
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 MYKKGENPVSYAGMLGTEDLLKFIQLNRISYPVNITSIQEAEEYLSGELYKDLILYSSVS
    new
                                                                                                                                                           1994-094827/12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QAIIEENLYLWLKKLEAGLENHITILPAQEWKPPLPAYDFLSMIDAATSQRGTRKVPKCM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     IESIPLASTHAQDIVQIITDALLEMFPEITVENLPSYFRLQKPLLILFSDGTVNPQYKKA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KETDVQENDKEQHEDKSAVRKEPIETLRIKHWNRSNWFKEAEKSFRRDKELGCSKVN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QAIIEENLVLWLKKLEAGLENHITILPAQEWKPPLPAYDFLSMIDAATSQRGTRKVPKCM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ILTLVKQKYLDSFTPCWLNLKNTPVGRGILRAYFDPLPPLPLLVLVNLHSGGQVFAFPSD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ILTLVKQKYLDSFTPCWLNLKNTPVGRGILRAYFDPLPPLPLLLVLVNLHSGGQVFAFPSD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KETDVQENDKEQHEDKSAVRKEPIETLRIKHWNRSNWFKEAEKSFRRDKELGCSKVN
                                          2; Page 7-8; 10pp; Japanese
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 disulphide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
PDI has the following characteristics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              enzyme;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (first
                                                                                                                                                                                                       CHEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AA;
                                                                                                                                                                                                                                               92JP-0135254
                                                                                                                                                                                                                                                                                            93JP-0044013
                                                                                                                                                                                                                                                                                                                                                                                                                                  KASI.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ribonuclease A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   isomerase;
                                                                                                                                                                                                       င္ပ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      44.48;
                                                                                                                                                                                                       LTD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 1839;
Pred. No. 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PDI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              disulphide isomerase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            substrate;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3-D; heat;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 22;
2.6e-155;
les 0;
                                                                                                                substance
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          refolding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 resistant;
æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
  has
  an
                                                                                                                for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               357;
  ability
                                                                                                                use
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
  of.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   750
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
```

```
QY
                                                                                   Qγ
                                                                                                                   В
                                                                                                                                                                              Вb
                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                       Вþ
                                                                                                                                                                                                                                                                                               Вр
                                                                                                                                                                                                                                                                                                                                                          망
 밁
                                                           망
                                                                                                                                               Q
                                                                                                                                                                                                                                                                  δã
                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                      Qy
                                                                                                                                                                                                                                                                                                                                                                                                                     рЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                 δã
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local S
Matches 112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               catalysing disulphide exchange reaction in a protein; (B) least ribonuclease A as the substrate; (C) has an optimum temp. of 20 to 70 degrees C; (D) is stable at pH 6 to 9; emol.wt. of ca. 60000 to 62000 measured by SDS-PAGE. PDI advantageously in a refolding reaction of a protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence
428
                             462
                                                           371
                                                                                        407
                                                                                                                    334
                                                                                                                                                347
                                                                                                                                                                              279
                                                                                                                                                                                                           291
                                                                                                                                                                                                                                       220
                                                                                                                                                                                                                                                                   246
                                                                                                                                                                                                                                                                                                  172
                                                                                                                                                                                                                                                                                                                              186
                                                                                                                                                                                                                                                                                                                                                            118
                                                                                                                                                                                                                                                                                                                                                                                         126
                                                                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                                                                                    75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              15 VIMCIFYMPTVNSLPELSPQKYFSTLQPGLEELNEAVRPLQDYGISVAKVNCVKEEISRY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local Similarity 21.9 nes 112; Conservative
                                                           LAPKYEELGALYAKSEFKDRVVIAKVD-ATANDV--PDEIQGFPTIKLYPAGAKGQPVTY
                                                                                       FLQSYIDVA---VKLKGTSTMLLTRINCADWSDVCTKQNVTEFPIIKMYKKGE--NPVSY
                                                                                                                                                                                                                                         D-YMSAGIPLAYIFAETAEERKELSDKLKPIAEAQRGVINFGTIDAKAFGAHAGNLNLKT
                                                                                                                                                                                                                                                                   TVHLQLGLPLVFIVSQQA------TYEADRRTAEW--VAWRLLG-KAGVLLLLR
                                                                                                                                                                                                                                                                                                    KAP
                                                                                                                                                                                                                                                                                                                                                                                                                       --EETDLCQQHGVEGYPTLKVFRGLDNVSPYKGQRKAAAITSYMIKQSLPAVSEVTK-DN
                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGKEKDLMKAYLFKGNILLREF-----PTDTLFDVNAIVAHVLFALL--FSEVKYITN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LVLAEFFAPWCGHCKALAP------EYEEAATTLKEKNIKLAKVDCT-----
SGSRTVEDLIKFIAENG-KYKAAIS--EDAEE
                           AGMLGTKDLLKFIQLNRISYPVNITSIQEAEE 493
                                                                                                                    EGPVTVVVAKNYNEIVLDDTK----
                                                                                                                                                EGPDIDVQDDEVAETVFRDRKRKLPLELTVELTEETFNATVMASDSIVLFYAGWQAVSMA
                                                                                                                                                                              DKFPAFAIQEVAKNQKFPFDQEKE-ITFEAIKAFVDDFVAGKIEPSIKSEPIPEKQ----
                                                                                                                                                                                                        DSLEV----NIPQDANVVFKRAEEGVPVEFLVLHDVDLIISHVENNMHIEEIQEDEDNDM
                                                                                                                                                                                                                                                                                                                             EDVEYAHLYFFHCKLVLDLTQQCRRTLMEQPLTTLNIHLFIKTMKAPLLTEVAEDPQQVS
                                                                                                                                                                                                                                                                                                                                                          LEEFKKADKA-----VLVAYVDASDKASSEVFTQVAEKLRDNYPFGSSSDAALAEAEGV
                                                                                                                                                                                                                                                                                                                                                                                        LEDLQNIENALKGKANIIFSYVRAIGIPEHRAVMEAGFVYGTTYQFVLTTEIALLESIGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AΑ
                                                                                                                                                                                                                                                                                                 ---AIVLYKDFDEGKAVFSEKFEVEAIEKFAKTGATPLIGEIG--PETYS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           79;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 185; DB
Pred. No. 1.9e
79; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        No. 1.9e-07;
smatches 213;
 456
                                                                                                                    -DVLIEFYAPWCGHCKA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                n optimum acting 6 to 9; and (E) 3E. PDI can be u
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          485;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           108;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ) has
used
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                        461
                                                                                                                                                406
                                                                                                                                                                                                                                                                                                                                                             171
                                                                                                                                                                              333
                                                                                                                                                                                                           346
                                                                                                                                                                                                                                         278
                                                                                                                                                                                                                                                                                                                                                                                                                       117
                                                                                                                                                                                                                                                                                                                                                                                                                                                    125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              74
                                                                                                                    370
                                                                                                                                                                                                                                                                   290
                                                                                                                                                                                                                                                                                                 219
                                                                                                                                                                                                                                                                                                                              245
                                                                                                                                                                                                                                                                                                                                                                                         185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             22;
```

```
RESULT 4
AAR73963
ID AAR7
XX
AC AAR7
DT 12-,
DT 12-,
XX
Hum
KW Hum
KW Prc
XX
CS Hum
CS Hum
CS Hum
FT Pe
                                                                                                                                                          promoter;
                                                                                                                                                                       Humicola
                                                                                                                                                                                                 Humicola
                                                                                                                                                                                                                         12-JAN-1996
                                                                                                                                                                                                                                                      AAR73963;
                                                                                                                                                                                                                                                                              AAR73963
                           JP07107980-A
                                                               Peptide
                                                                                         Peptide
                                                                                                                                  Humicola
                                                                                                                                                                       insolens;
                                                                                                                                                                                               insolens protein disulphide isomerase.
                                                                                                                                                                                                                                                                              standard;
                                                                                                                                  insolens
                                                                                                                                                       insolens; protein disulphide isomerase; recombinant production; fungal protein
                                                                                                                                                                                                                          (first entry)
                                                                /label=
21..505
                                                     /label=
                                                                                                     ocation/Qualifiers
                                                                                                                                                                                                                                                                              Protein;
                                                    mat_peptide
                                                                              sig_peptide
                                                                                                                                                                                                                                                                              505
                                                                                                                                                                                                                                                                              A
```

Bacillus

brevis;

Go ca

```
RESULT 5
AAR63807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local S
Matches 112
 29-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAQ87670 encodes AAR73963 Humicola insolens protein disulphide isomerase (PDI). By linking a Bacillus brevis promoter to the cDNA the fungal PDI can be expressed in B. brevis cells. The recombinant PDI can then be isolated from the culture medium, with a yelld as high as 500mg/l of culture supernatant.
                                      AAR63807;
                                                                      AAR63807 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Fungal protein di:sulphide isomerase encoded contg. Bacillus brevis promoter - useful for large quantities of the enzyme.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               N-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  30-SEP-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     30-SEP-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (TOYW ) TOYOTA CHUO KENKYUSHO (UTAK/) UTAKA J.
                                                                                                                                                               448
                                                                                                                                                                                               462
                                                                                                                                                                                                                                391
                                                                                                                                                                                                                                                                  407
                                                                                                                                                                                                                                                                                                     354
                                                                                                                                                                                                                                                                                                                                     347
                                                                                                                                                                                                                                                                                                                                                                        299
                                                                                                                                                                                                                                                                                                                                                                                                          291
                                                                                                                                                                                                                                                                                                                                                                                                                                            240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            40 LVLAEFFAPWCGHCKALAP------EYEEAATTLKEKNIKLAKVDCT-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            15
                                                                                                                                                                                                                                                                                                                                                                                                                                            D-YMSAGIPLAYIFAETAEERKELSDKLKPIAEAQRGVINFGTIDAKAFGAHAGNLNLKT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TVHLQLGLPLVFIVSQQA----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VIMCIFYMPTVNSLPELSPOKYFSTLQPGLEELNEAVRPLQDYGISVAKVNCVKEEISRY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1995-190180/25
DB; AAQ87670.
                                                                                                                                                             SGSRTVEDLIKFIAENG-KYKAAIS--EDAEE
                                                                                                                                                                                                                                LAPKYEELGALYAKSEFKDRVVIAKVD-ATANDV--PDEIQGFPTIKLYPAGAKGQPVTY
                                                                                                                                                                                                                                                                                                   EGPVTVVVAKNYNEIVLDDTK----
                                                                                                                                                                                                                                                                                                                                   EGPDIDVQDDEVAETVFRDRKRKLPLELTVELTEETFNATVMASDSIVLFYAGWQAVSMA
                                                                                                                                                                                                                                                                                                                                                                        DKFPAFAIQEVAKNQKFPFDQEKE-ITFEAIKAFVDDFVAGKIEPSIKSEPIPEKQ----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KAP-----AIVLYKDFDEGKAVFSEKFEVEAIEKFAKTGATPLIGEIG--PETYS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LEDLQNIENALKGKANIIFSYVRAIGIPEHRAVMEAGFVYGTTYQFVLTTEIALLESIGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       --EETDLCQQHGVEGYPTLKVFRGLDNVSPYKGQRKAAAITSYMIKQSLPAVSEVTK-DN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CGKEKDLMKAYLFKGNILLREF-----PTDTLFDVNAIVAHVLFALL--FSEVKYITN 125
                                                                                                                                                                                              AGMLGTKDLLKFIQLNRISYPVNITSIQEAEE
                                                                                                                                                                                                                                                                FLQSYIDVA---VKLKGTSTMLLTRINCADWSDVCTKQNVTEFPIIKMYKKGE--NPVSY
                                                                                                                                                                                                                                                                                                                                                                                                          DSLEV----NIPQDANVVFKRAEEGVPVEFLVLHDVDLIISHVENNMHIEEIQEDEDNDM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EDVEYAHLYFFHCKLVLDLTQQCRRTLMEQPLTTLNIHLFIKTMKAPLLTEVAEDPQQVS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LEEFKKADKA-----VLVAYVDASDKASSEVFTQVAEKLRDNYPFGSSSDAALAEAEGV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pages 8-11; 13pp; Japanese.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                505 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  93JP-0245279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     93JP-0245279
                                                                      Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               79;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -----TYEADRRTAEW--VAWRLLG-KAGVLLLLR
                                                                      505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 185; DB 16; Length 505; Pred. No. 2e-07; Indels 108;
                                                                      A
                                                                                                                                                               476
                                                                                                                                                                                               493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     by recombinant DNA efficient production
                                                                                                                                                                                                                                                                                                   -DVLIEFYAPWCGHCKA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                  447
                                                                                                                                                                                                                                                                  461
                                                                                                                                                                                                                                                                                                                                                                                                          346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          of
                                                                                                                                                                                                                                                                                                                                                                        353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               22;
Š
                                  Вþ
                                                               Qy
                                                                                                       밁
                                                                                                                                     δÃ
                                                                                                                                                                           DЬ
                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                         Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches 111;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAQ73410 encodes AAR63807 Humicola insolens protein disulphide isomerase (PDI), which was used in the construction of a vector. The vector was used to transform suitable host cells enabling them to produce PDI. PDI produced in this way had increased stability and tolerance to sulphhydryl group containing reducers, compared to PDI obtained from mammals and yeast.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Key
Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Protein di:sulphide isomerase (PDI) gene - encodes a PDI showing increased stability, and tolerance against a sulphydryl gp-conty.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       04-MAR-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 1; Page 12; 15pp; Japanese.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  N-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (TOYW ) TOYOTA CHUO KENKYUSHO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     04-MAR-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        13-SEP-1994.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JP06253857-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Humicola insolens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                sulphhydryl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Protein disulphide isomerase; PDI; Humicola insolens;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Protein disulphide
                                    354
                                                                    347
 407
                                                                                                                                                                                                                                                  192
                                                                                                        299
                                                                                                                                           291
                                                                                                                                                                             240
                                                                                                                                                                                                                246
                                                                                                                                                                                                                                                                                   186
                                                                                                                                                                                                                                                                                                                     138
                                                                                                                                                                                                                                                                                                                                                      126
                                                                                                                                                                                                                                                                                                                                                                                          81
                                                                                                                                                                                                                                                                                                                                                                                                                          75
                                                                                                                                                                                                                                                                                                                                                                                                                                                             40 LVLAEFFAPWCGHCKALAP------EYEEAATTLKEKNIKLAKVDCT-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             15 VIMCIFYMPTVNSLPELSPQKYFSTLQPGLEELNEAVRPLQDYGISVAKVNCVKEEISRY 74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1994-328999/41.
DB; AAQ74310.
                                                                                                                                                                                                            TVHLQLGLPLVFIVSQQATYEAD-----RRTAE-----WVAWRLLG-KAGVLLLLR
                                                                                                                                                                                                                                                                                                                                                    LEDLQNIENALKGKANIIFSYVRAIGIPEHRAVMEAGFVYGTTYQFVLTTEIALLESIGS 185
 FLQSYIDVA---VKLKGTSTMLLTRINCADWSDVCTKQNVTEFPIIKMYKKGE--NPVSY
                                    EGPDIDVQDDEVAETVFRDRKRKLPLELTVELTEETFNATVMASDSIVLFYAGWQAVSMA
                                                                                                       DKFPAFAIQEVAKNQKFPFDQEKE-ITFEAIKAFVDDFVAGKIEPSIKSEPIPEKQ----
                                                                                                                                       DSLEV----NIPQDANVVFKRAEEGVPVEFLVLHDVDLIISHVENNMHIEEIQEDEDNDM 346
                                                                                                                                                                             D-YMSAGIPLAYIFAETAEERKELSDKLKPIAEAQPGVINFGTIDAKAFGAHAGNLNLKT
                                                                                                                                                                                                                                                                                 EDVEYAHLYFFHCKLVLDLTQQCRRTLMEQPLTTLNIHLFIKTMKAPLLTEVAEDPQQVS
                                                                                                                                                                                                                                                                                                                   LEEFKKADKA-----VLVAYVDASDKASSEVFTQVAEKLRDNYPFGSSSDAALAEAEGV 191
                                                                                                                                                                                                                                                                                                                                                                                        --EETDLCQQHGVEGYPTLKVFRGLDNVSPYKGQRKAAAITSYMIKQSLPAVSEVTK-DN
                                                                                                                                                                                                                                                                                                                                                                                                                         CGKEKDLMKAYLFKGNILLREF-----PTDTLFDVNAIVAHVLFALL--FSEVKYITN 125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      505 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              group containing reducer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     93JP-0044014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       93JP-0044014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
1..20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /label= sig_peptide
                                                                                                                                                                                                                                                -AIVLYKDEDEGKAVFSEKFEVEAIEKFAKTGATPLIGEIG--PETYS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     isomerase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4.3%;
21.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; 08
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 180; DB 15;
Pred. No. 5.7e-07;
0; Mismatches 213;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 505;
```

Indels

108;

Gaps

22;

137

90

Q В Qy В δÃ

밁

* DXXXXB

461 390 406

353

298 290 239 245

δÃ 밁 Ş В õ 용 Š В δÃ 밁 Q

В

Ę

```
RESULT 6
ABB62855
ID ABB62855
ID ABB6
XX ABB6
XX ABB6
XX Dros
XX PR 23-P
PF 23-P
PR 11---
XX Vent
XX Vent
XX Vent
XX Vent
XX Vent
XX New
PT Gen
PT intu
XX Dis
XX Dis
XX Dis
XX CC Gins
CC Gin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                  Ş
                                                      В
                                                                                  Qγ
                                                                                                                          Ъ
                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                      Query Match
Best Local
                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                         capable of detecting 1000 or more genes from Drosophila. The inventuseful in developmental biology and in elucidating cell signalling cell-cell interactions in higher eukaryotes for the development of insecticides, therapeutics and pharmaceutical drugs. The invention discloses genomic DNA sequences (ABL16176-ABL30511), expressed DNA sequences (ABL01840-ABL16175) and the encoded proteins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The invention relates to an isolated nucleic acid detection reagent capable of detecting 1000 or more genes from Drosophila. The invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      N-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                23-MAR-2000;
11-JUL-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WO200171042-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              pharmaceutical.
                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                           The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Disclosure; SEQ ID NO 15357; 21pp + Sequence Listing; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 interactions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                New isolated nucleic acid genes from Drosophila and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Venter JC, Adams M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (PEKE ) PE CORP NY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   23-MAR-2001; 2001WO-US09231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       27-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Drosophila melanogaster.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Drosophila;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Drosophila melanogaster polypeptide SEQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      26-MAR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ABB62855;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ABB62855 standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            391
                    484
                                                                                                                             20
                                                                                                                                                                                                                                                                                                          ftp.wipo.int/pub/published_pct_sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SGSRTVEDLIKFIAENG-KYKAAIS--EDAEE 476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LAPKYEELGALYAKSEFKDRVVIAKVD-ATANDV--PDEIQGFFTIKLYPAGAKGQPVTY 447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2001-656860/75.
DB; ABL06958.
                    NITSIQEAEEYLSGELYKDLILYSSVSVLGLFSPTMKTAKEDFSEAGNYLKGYVITGIYS
                                                                                                                                                             ELTVELTEETFNATV-----MASDSIVL--FYAGWQAVSMAFLQSYIDVAVKL-KGTST 423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGMLGTKDLLKFIQLNRISYPVNITSIQEAEE
                                                      IKLAKVDATVEGELAEQYAVRGYPTLKFFRSG-SPVEYSGGRQAADIIAWVTKKTGPPAK 138
                                                                                          MLLTRINCADWSDVCTKQNVTEFPIIKMYKKGENPVSYAGMLGTKDLLKFIQLNRISYPV
                                                                                                                             EAEVKVEEGVLVATVDNFKQLIADNEFVLVEFYAPWCGHCKALAPEYAKAAQQLAEKESP
 :: :: :: ::
                                                                                                                                                                                                     99;
                                                                                                                                                                                                 Similarity 19.9
99; Conservative
                                                                                                                                                                                                                                                                          496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       developmental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2000US-191637P
2000US-0614150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                                                                                                                                          Ą
                                                                                                                                                                                                                    4.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Li
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PWD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               biology;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 detection reagent for detecting for elucidating cell signalling
                                                                                                                                                                                               96;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              496
                                                                                                                                                                                                                    Score 177; DB 2
Pred. No. 1e-06;
                                                                                                                                                                                                   Mismatches 180;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Myers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AΑ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ΕŒ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               signalling; insecticide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ID NO 15357
                                                                                                                                                                                                                                     22;
 ::
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              =
=
::
                                                                                                                                                                                                                                   Length 496;
                                                                                                                                                                                                   Indels 122;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1000 or more and cell-cell
 --
                                                                                                                                                                                                 Gaps
                                                                                          483
                    543
                                                                                                                             79
                                                                                                                                                                                                                                                                                                                                                                                                                                                       and
                                                                                                                                                                                                                                                                                                                             WIPO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        is
                                                                                                                                                                                                   25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 7
AAR82801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Вр
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qy
                  QΥ
                                                                                                                             SON CCCCXX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                      Query Match
Best Local S
Matches 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAR82801;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAR82801 standard;
                                                                                                                             Sequence
                                                                                                                                                                                  AAR82801 is can be used
                                                                                                                                                                                                                                       Example 1; Page 25-29; 39pp; Japanese.
                                                                                                                                                                                                                                                                                                                             N-PSDB; AAT00952.
                                                                                                                                                                                                                                                                                                                                              WPI; 1995-139593/18
                                                                                                                                                                                                                                                                                                                                                                                Hirai н,
                                                                                                                                                                                                                                                                                                                                                                                                                                                       24-SEP-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           22-SEP-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             30-MAR-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Phospholipase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bovine phospholipase C-alpha
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             29-NOV-1995
                                                                                                                                                                 measure
                                                                                                                                                                                                                                                                                        Human phospholipase C-alpha and DNA encoding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO9508624-A
                                                                                                                                                                                                                                                                          inflammatory
                                                                                                                                                                                                                                                                                                                                                                                                                  (SHIO ) SHIONOGI & CO LTD
 446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        889
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            659
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FKEAEK - - - SFRRDKEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NADVI - - - AKYEAKDNGVVLFKPFDDK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FRKEDNKVIDFNLDRTL
::
-
::
-
                                                                       Similarity
                                                                                                                                                               cancer progression.
                                                                                                                                                                                                                                                                                                                                                                                Hirano N;
                                                                                                                             505
                                                      4.2%; ilarity 23.3%; Conservative 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      C;
                                                                                                                             Ã
                                                                                                                                                                                                                                                                                                                                                                                                                                                       93JP-0238402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           94WO-JP01572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PLC; alpha;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             801
                                                        56;
                                                      Score 175.5; DB 16
Pred. No. 1.4e-06;
6; Mismatches 128;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (PLC-alpha).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
```

```
Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KSVLVEFYAPWCGHCKQLAPIYDQLAEKYKDNEDIVIAKMDSTANELESIKISSFPTIKY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            YKPESDDLSAETIEAFLKKFLDGKLKOHLLSQELP-EDWDKNPVKVLVSSNFESVALDKS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      --PSDQAIIEENLVLWLKK-LEAGLENHITI--LPAQEW-KPP---LPAYDFLSM-IDAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HIEKYVDPLKEIAKKYRDDILFVTISSDEEDHTRIFEFFGMNKEEVPTIRLIKLEEDMAK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EEDVLLLSTKYAASLPALLLARHTEGKIESIPLASTHAQDIVQIITDALLEMFPEITVEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DLTSVADAEQFL-----KD----NEIAIIGFFKDLESEEAKTFTKVANALDSFVF-GVSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TSQRGTRKVP---KCMKETDVQENDKEQHEDKSAV-----RKEPIETLRIKHWNRSNW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ILRAYFDPLPPLPL-----LVLVNLHSGGQ----VFAF-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LKKFAQVQSLPLIVDFNHESASKIFGGSIKSHLLFFVSRE----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LPSYFRLQK-PLLILFSDGTVNPQY----KKAILTLVKQKYLDSFTPCWLNLKNTPVGRG
                                                                                                                                               bovine phospholipase C-alpha (PLC-alpha). PLC-alpha as an anti-inflammatory and may also be used to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         anti-inflammatory; cancer.
                                          DB 16;
                                                                                                                                                                                                                                                                               it -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           --KSVFE--GELNEEN
Indels
                                                                                                                                                                                                                                                                               useful
                                        Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -----GG
                                                                                                                                                                                                                                                                                 as anti
                                          505;
  33;
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   658
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              687
```

431

9

```
RESULT 8
AAR69506
밁
                                                                                                                   20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       рЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                       Query Match
Best Local
                                                         Matches
                                                                                                                                                         This sequence encodes a protein-disulfide-isomerase (PDI) which is useful for treatment or degradation of scleroproteins, which is useful for treatment or degradation of scleroproteins, especially hair, skin and wool, etc. The protein is prepared recombinantly from Aspergillus oryzae IFO 4177 or Aspergillus niger A524. The protein may be truncated into various peptides niger A524. The protein may be truncated into various peptides niger A524. The protein may be truncated into various peptides niger A524.
                                                                                                                                                                                                                                                                                                        Protein di-sulphide isomerase enzyme - obtd. from Aspergillus, useful for e.g. treating scleroproteins such as human hair or
                                                                                                                  Sequence
                                                                                                                                                                                                                                                               Disclosure; Page 10; 61pp; English
                                                                                                                                                                                                                                                                                            fabric cleaning
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WO9500636-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Aspergillus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Protein-disulfide-isomerase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Aspergillus sp. recombinant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAR69506 standard;
                                                                                                                                                                                                                                                                                                                                                    WPI; 1995-052073/07
N-PSDB; AAQ81934.
                                                                                                                                                                                                                                                                                                                                                                                                Hjort CM;
                                                                                                                                                                                                                                                                                                                                                                                                                            (NOVO ) NOVO-NORDISK
                                                                                                                                                                                                                                                                                                                                                                                                                                                          28-JUN-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     28-JUN-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      filamentous
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             18-AUG-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAR69506;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     552
48
                            15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                28
                           VIMCIFYMPTVNSLPELSPQKYFSTLQPGLEELNEAVRPLQDYGISVAKVNCVKEE-ISR 73
LVLAEFFAPWCGHCKALAP-KY-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ---LLQGKDLLIAYYDVDYEKNAKGSNYWRNRVMWVAKKFLDA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ADWSDVCTKQNVTEFPIIKMYKKGENPVSYAGMLGTKDLLKFIQLNRISYPVNITSIQEA 491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SYFRLQ-KPLLILFSD-----GTVNPQYKKAILTLVKQKYLDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NKYDDDGEGITLFRPSHLTNKFEDKTVAYTEQKMTSGKIKRFIQENIFGICPHMTEDNKD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TKYAASLPALLLAR--HTEGKIESIPLASTHAQ----DIVQIITDALLEMFPEITVENLP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EKFISDK - - - - - - - DASVVGFFKDLFSEAHSEFLKAASNLRD - - - NYRFAHTNVESLV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EEYLSGELYKDLILYSSVSVLGLFSPTMKTAKEDFSEAGNYLKGYVITGIYSEEDVLLLS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TANTINTCNKYGVSGYPTLKIFRDGEESGAYDGPRTADGIVSHLKKQAGPASVPLKSEEEF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LELTDDNFESRITDTGSSGLMLVEFFAPWCGHCKKLAPEYEAAATRLKG--IVPLAKVDC
                                                                       Similarity
                                                                                                                                              Ala
                                                                                                                   511 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    fungus
                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                          93DK-0000768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    94WO-DK00266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Protein;
                                                                     4.2%;
                                                                                                                                                           n may be truncated into various peptides, This protein differs from AAR69505 in that
                                                      %; Score 172.5; DB 1
%; Pred. No. 2.7e-06;
107; Mismatches 185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               protein-disulfide-isomerase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    enzyme;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AA
--- EQAATELKEKNIPLVKVDCTEEEALCR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    scleroprotein;
                                                                                     DB 16;
                                                         185;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          642
                                                         Indels 131;
                                                                                  Length 511;
                                                                                                                                                                                                                                                                                                           for
                                                      Gaps
95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                85
                                                         28;
```

```
AAR69504
ID AAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT
This sequence encodes a protein-disulfide-isomerase (PDI) which is useful for treatment or degradation of scleroproteins, especially hair, skin and wool, etc. The protein is prepared recombinantly from Aspergillus oryzae IFO 4177 or Aspergillus
                                                                   Disclosure; Page 32; 61pp; English
                                                                                               Protein di-sulphide isomerase enzyme - obtd. useful for e.g. treating scleroproteins such fabric cleaning
                                                                                                                                                       WPI; 1995-052073/07.
N-PSDB; AAQ81933.
                                                                                                                                                                                                                          (NOVO ) NOVO-NORDISK AS.
                                                                                                                                                                                                                                                                                  28-JUN-1994;
                                                                                                                                                                                                                                                                                                              05-JAN-1995
                                                                                                                                                                                                                                                                                                                                          WO9500636-A
                                                                                                                                                                                                                                                                                                                                                                    Aspergillus
                                                                                                                                                                                                                                                                                                                                                                                                                                        Aspergillus sp. recombinant protein-disulfide-isomerase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAR69504;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAR69504 standard;
                                                                                                                                                                                                                                                       28-JUN-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     18-AUG-1995
                                                                                                                                                                                                                                                                                                                                                                                                 filamentous
                                                                                                                                                                                                                                                                                                                                                                                                             Protein-disulfide-isomerase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 YCGKEKDLMKAY----LFKGNILLREFPTDTLFDVNAIVAHVLFALLFSEVKYIT--NLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KKG--ENPVSYAGMLGTKDLLKFIQLNRISYPVNITSIQEAEEYLSGE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         --DMEGPDI-----DVQDDEVAETVFRD----RKRKLPLELTVELTEETFNATVMASDSIV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DQGVE-----GYPTLKIFRGLDAVK--PYQGARQTEAIVSYMVKQSL-PAVSPVTPENLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAGAKDSPVEYEGSRTVEDLANFVKENG-KHKVDALEVDPKKEQESGD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LLEFYAPWCGHCKALAPKYEELASLYKDIPEVTIAK LD-ATANDV--PDSITGFPTIKLF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               L--FYAGWQAVSMAFLQSYIDVAVKLKGTSTMLLTRINCADWSDVCTKQNVTEFPIIKMY 452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SKEVKAKDIGKFIQDVLDDKVEPSIKSEAIPETQEGPVTVVV---AHSYKDLVLDNEKDV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QDANVVFKRAEEGVPVEFLVLHDVDLIISHVENNMHIE-----EIQEDEDN-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PETYSG-YITAGIPLAYIFA-ETKEEREQFTEEFKFIAEKHKGSINIVTI------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PQQVSTVHLQLGLPLVFIVSQQATYEADRRTAE - - WVAWRLLGKAGVLLLLRDSLEVNIP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KAEGVKQP----SIVLYKDFDEKKATYDGEIEQDALLSWVKTASTPLVGELG--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ESIGSEDVEYAHLYFFHCKLVLDLTQQCRRTLMEQPLTTLNIHLFIKTMKAPLLTEVAED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EIKTMDKI-----VVIGYIASDD------QTANDIFTTFAESQRDNYLFAATSDASIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DLQNIENALKGKANIIFSYVRAIGIPEHRAVMEAGFVYGT - - - - - TYQFVLTTEIALL
                                                                                                                                                                                                                                                                                                                                                                                               fungus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                                                                                                                                                                                                                                                       93DK-0000768
                                                                                                                                                                                                                                                                                  94WO-DK00266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -----DAKLYGAHA-GNLNLDPSKFPAFATQDPEKNAKYPYDQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           515
                                                                                                                                                                                                                                                                                                                                                                                                             enzyme; scleroprotein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AA
                                                                                                            from Aspergillus, as human hair or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            498
                                                                                                               for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           127
```

```
В
                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ър
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      γQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SXXCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    niger A524. The protein may all with PDI activity.
            (NOVO ) NOVO
                                   18-MAY-1999;
02-JUN-1999;
                                                           17-MAY-1999;
                                                                                   17-MAY-2000;
                                                                                                           23-NOV-2000
                                                                                                                                   WO200070064-A1
                                                                                                                                                        Aspergillus
                                                                                                                                                                                  Disulphide bond; allergy; food additive; cosmetic.
                                                                                                                                                                                                                      A. oryzae protein disulfide isomerase
                                                                                                                                                                                                                                              07-MAR-2001
                                                                                                                                                                                                                                                                      AAB49946;
                                                                                                                                                                                                                                                                                            AAB49946 standard;
                                                                                                                                                                                                                                                                                                                                                        442
                                                                                                                                                                                                                                                                                                                                                                               453
                                                                                                                                                                                                                                                                                                                                                                                                        385
                                                                                                                                                                                                                                                                                                                                                                                                                                                       328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          15 VIMCIFYMPTVNSLPELSPQKYFSTLQPGLEELNEAVRPLQDYGISVAKVNCVKEE-ISR 73 ::: |: | :| |:| :| :| :| :|
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DLQNIENALKGKANIIFSYVRAIGIPEHRAVMEAGFVYGT-----TYQFVLTTEIALL 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DQGVE-----GYPTLKIFRGLDAVK--PYQGARQTEAIVSYMVKQSL-PAVSPVTPENLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LVLAEFFAPWCGHCKALAP-KY---
                                                                                                                                                                                                                                                                                                                                                                                                     LLEFYAPWCGHCKALAPKYEELASLYKDIPEVTIAKID-ATANDV-~PDSITGFFTIKLF
                                                                                                                                                                                                                                                                                                                                                                                                                                                      SKEVKAKDIGKFIQDVLDDKVEPSIKSEAIPETQEGPVTVVV---AHSYKDLVLDNEKDV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           --DMEGPDI-----DVQDDEVAETVFRD---RKRKLPLELTVELTEETFNATVMASDSIV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KAEGVKQP-----SIVLYKDFDEKKATYDGEIEQDALLSWVKTASTPLVGELG--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ESIGSEDVEYAHLYFFHCKLVLDLTQQCRRTLMEQPLTTLNIHLFIKTMKAPLLTEVAED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EIKTMDKI-----VVIGYIASDD-----QTANDIFTTFAESQRDNYLFAATSDASIA
                                                                                                                                                                                                                                                                                                                                                      AAGAKDSPVEYEGSRTVEDLANFVKENG-KHKVDALEVDPKKEQESGD
                                                                                                                                                                                                                                                                                                                                                                             KKG--ENPVSYAGMLGTKDLLKFIQLNRISYPVNITSIQEAEEYLSGE 498
                                                                                                                                                                                                                                                                                                                                                                                                                             L--FYAGWQAVSMAFLQSYIDVAVKLKGTSTMLLTRINCADWSDVCTKQNVTEFPIIKMY 452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QDANVVFKRAEEGVPVEFLVLHDVDLIISHVENNMHIE-----EIQEDEDN-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PETYSG-YITAGIPLAYIFA-ETKEEREQFTEEFKFIAEKHKGSINIVTI------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PQQVSTVHLQLGLPLVFIVSQQATYEADRRTAE---WVAWRLLGKAGVLLLLRDSLEVNIP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      YCGKEKDLMKAY - - - - LFKGNILLREFPTDTLFDVNAIVAHVLFALLFSEVKYIT - - NLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             al Similarity
105; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             515
                                                                                                                                                          oryzae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
            NORDISK AS
                                                                                   2000WO-DK00265
                                                                                                                                                                                                                                             (first entry)
                                   99DK-0000683.
99DK-0000689.
99US-0137068.
                                                                                                                                                                                                                                                                                             Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ------DAKLYGAHA-GNLNLDPSKFPAFAIQDPEKNAKYPYDQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4.2%;
19.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             107;
                                                                                                                                                                                              protein disulfide
                                                                                                                                                                                                                                                                                             515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 172.5; DB 16;
Pred. No. 2.7e-06;
17; Mismatches 185;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               be truncated into various peptides,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ------EQAATELKEKNIPLVKVDCTEEEALCR
                                                                                                                                                                                                                                                                                             ₿
                                                                                                                                                                                                                      #1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 16;
                                                                                                                                                                                              isomerase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length
                                                                                                                                                                                                                                                                                                                                                       488
                                                                                                                                                                                              variant;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             131;
                                                                                                                                                                                             detergent;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      127
                                                                                                                                                                                                                                                                                                                                                                                                       441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                147
                                                                                                                                                                                                                                                                                                                                                                                                                                                      384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             28;
```

RESULT 11 AAE12991

standard;

Protein;

515

AAE12991 sta AAE12991; 28-JAN-2002

(first

entry)

Heat shock protein; HSP; HSP peptide-binding fragment; HPBF; vaccine; cytotoxic T cell response; hepatitis virus; herpes simplex virus;

Human protein disulphide isomerase (PDI).

```
밁
                            Qy
                                                              밁
                                                                                           δÃ
                                                                                                                             밁
                                                                                                                                                          ρy
                                                                                                                                                                                            밁
                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                            B
                                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                            Вр
                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     γQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   The present invention provides variants of the Aspergillus oryzae prodisulfide isomerase enzyme. These are capable of reducing disulphide bonds in proteins, which may be the cause of allergies in humans. The proteins can be used to reduce the allergenicity of foods, to treat scleroproteins, in detergents, in food additives and in cosmetics.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Protein disulfide isomerase variant having increased reducing properties and decreased redox potential than native proteins, used to reduce allergenicity of allergic proteins in feed, food or cosmetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim 3; Page 72-74; 82pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   N-PSDB; AAC89028
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WPI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Hjort CM;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence
442
                                453
                                                                385
                                                                                              395
                                                                                                                               328
                                                                                                                                                             345
                                                                                                                                                                                             291
                                                                                                                                                                                                                            299
                                                                                                                                                                                                                                                            243
                                                                                                                                                                                                                                                                                           241
                                                                                                                                                                                                                                                                                                                            195
                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                           148
                                                                                                                                                                                                                                                                                                                                                                                                                          128
                                                                                                                                                                                                                                                                                                                                                                                                                                                          96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             15 VIMCIFYMPTVNSLPELSPQKYFSTLQPGLEELNEAVRPLQDYGISVAKVNCVKEE-ISR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       48 LVLAEFFAPWCGHCKALAP-KY------EQAATELKEKNIPLVKVDCTEEEALCR 95
                  KKG--ENPVSYAGMLGTKDLLKFIQLNRISYPVNITSIQEAEEYLSGE
                                                                                                                                                                                                                                                                                  PQQVSTVHLQLGLPLVFIVSQQATYEADRRTAE--WVAWRLLGKAGVLLLLRDSLEVNIP
                                                                                                                                                                                                                                                                                                                                                                                                                   DLQNIENALKGKANIIFSYVRAIGIPEHRAVMEAGFVYGT-----TYQFVLTTEIALL 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                          DQGVE-----GYPTLKIFRGLDAVK--PYQGARQTEAIVSYMVKQSL-PAVSPVTPENLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       YCGKEKDLMKAY - - - - LFKGNILLREFPTDTLFDVNAIVAHVLFALLFSEVKYIT - - NLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2001-070776/08
AAGAKDSPVEYEGSRTVEDLANFVKENG-KHKVDALEVDPKKEQESGD
                                                              LLEFYAPWCGHCKALAPKYEELASLYKDIPEVTIAKID-ATANDV--PDSITGFPTIKLF
                                                                                             L--FYAGWQAVSMAFLQSYIDVAVKLKGTSTMLLTRINCADWSDVCTKQNVTEFPIIKMY
                                                                                                                             SKEVKAKDIGKFIQDVLDDKVEPSIKSEAIPETQEGPVTVVV---AHSYKDLVLDNEKDV
                                                                                                                                                                                                                            QDANVVFKRAEEGVPVEFLVLHDVDLIISHVENNMHIE-----EIQEDEDN-----
                                                                                                                                                                                                                                                       PETYSG-YITAGIPLAYIFA-ETKEEREQFTEEFKFIAEKHKGSINIVTI------
                                                                                                                                                                                                                                                                                                                         KAEGVKQP-----SIVLYKDFDEKKATYDGEIEQDALLSWVKTASTPLVGELG--
                                                                                                                                                                                                                                                                                                                                                         ESIGSEDVEYAHLYFFHCKLVLDLTQQCRRTLMEQPLTTLNIHLFIKTMKAPLLTEVAED
                                                                                                                                                                                                                                                                                                                                                                                         EIKTMDKI-----VVIGYIASDD-----QTANDIFTTFAESQRDNYLFAATSDASIA
                                                                                                                                                          --DMEGPDI-----DVQDDEVAETVFRD----RKRKLPLELTVELTEETFNATVMASDSIV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity 19.9
05; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        515 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4.28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       107;
                                                                                                                                                                                            -DAKLYGAHA-GNLNLDPSKFPAFAIQDPEKNAKYPYDQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 172.5; DB 2
Pred. No. 2.7e-06;
D7; Mismatches 185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         185;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels 131;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length
                                498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      515;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        127
                                                                441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   protein
                                                                                                                             384
                                                                                                                                                                                             327
                                                                                                                                                                                                                                                                                           298
                                                                                                                                                                                                                                                                                                                                                                                         194
                                                                                                                                                                                                                                                                                                                                                                                                                                                          147
                                                                                                                                                             394
                                                                                                                                                                                                                            344
                                                                                                                                                                                                                                                            290
                                                                                                                                                                                                                                                                                                                            242
                                                                                                                                                                                                                                                                                                                                                         240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28;
```

```
Ŧ 05
                                                                                             Q
                                                                                                                                                               В
                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                            peptide binding fragments of heat shock proteins (HSPS) and non-
covalent complexes of HSP peptide binding fragments (HBPS) and non-
covalent association with antigenic molecules. Vaccines comprising
peptide fragments of the invention may be used to stimulate an
immune response, in particular cytotoxic T cell responses against
cells infected with viruses (including hepatitis type A, B and C,
influenza, varicella, adenovirus, herpes simplex (HSV) type I and
type II, rinderpest rhinovirus, echovirus, rotavirus, respiratory
syncytial virus, mumps virus, papova virus, papilloma virus,
syncytial virus, rubella virus, popilo virus, huntavirus, coxsackie virus,
carbovirus, cytomegglovirus, popilo virus, huntavirus, coxsackie virus,
measles virus, rubella virus, popilo virus, HIV-I, and HIV-II;
measles virus, rubella virus, popilo virus, HIV-I, and HGV-II;
measles virus, rubella virus, popilo virus, HIV-I, and HGV-II;
measles virus, rubella virus, popilo virus, HIV-I, and HGV-II;
measles virus, rubella virus, popilo virus, huntavirus, coxsackie virus,
carbovirus, rubella virus, popilo virus, huntavirus,
chacteria including (including Mycobacteria, Rickettsia, Mycoplasma,
Neisseria and Legionella); protozoa (including Leishmani, Kokzidioa
and Trypanosoma) and intracellular parasites (including Chlamydia and
carbovirus, prostate cancer, squamous cell carcinoma, basal cell carcinoma,
adenorarinoma event cland carcinoma, basal cell carcinoma,
                                                                                                                                                                                                                                                                                              Query Match
Best Local S
Matches 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Vaccine compositions for vaccinating against cancers and infections, comprises peptide-binding fragments (PBFs) of heat shock proteins (HSPs) and non-covalent complexes of PBFs of HSPs and antigenic
                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    hepatoma, bile duct carcinoma, choriocarcinoma, seminoma and embryonal carcinoma. The present sequence is human protein disulphide isomerase (PDI), a HSP involved in folding of many disulphide-bonded proteins.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           adenocarcinoma, sweat gland carcinoma, sebaceous gland carcinoma, papillary carcinoma, papillary adenocarcinomas, medullary carcinoma, papillary adenocarcinoma, renal cell carcinoma, bronchogenic carcinoma, renal cell carcinoma, pagintare del ca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Disclosure; Fig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              molecules
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                25-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US2001034042-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Binding-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Binding-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Binding-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             human immunodeficiency virus; bacteria; Mycobacteria; Rickettsia; protozoa; Leishmani; Trypanosoma; intracellular parasite; Chlamydia; sarcoma; carcinoma; cancer; human; protein disulphide isomerase; PDI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The invention relates to pharmaceutical compositions comprising
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 20-JAN-2000; 2000US-0488393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                12-JAN-2001; 2001US-0759010
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (SRIV/)
                                    88
                                                                                                75
                                                                                                                                                                  44
                                                                                                                                                                                                                              15
                                                                                                                                                                                                                                                                                                                           Local Similarity
                                                                                                                                                                                                VIMCIFYMPTVNSLPELSPQKYFSTLQPGLEELNEAVRPLQDYGISVAKVNCVKEEISRY 74 ::: |: | : | : | | | |
                                                                                                CGKEKDLMKAYLFKGNILLREF - - - - - - PTDTLFDVNAIVAHVLFALL - - FSEVKYITN
                                                                                                                                                               LVLAEFFAPWCGHCKALAP-KY-----EEAATELKAKNIPLVKVDCTAEE----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2001-656559/75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SRIVASTAVA P
                                    DLCRSQGVEGYPTLKTFRGVDSSKPYQGARQTESTVSYMIKQSLPAVSSVNE-EN
                                                                                                                                                                                                                                                                                                                                                                                                                            515
                                                                                                                                                                                                                                                                                                                                                                                                                         AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note=
213..3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note= "
204..491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                                        4.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            . 351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "Peptide binding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "Peptide binding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       "Peptide binding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               English.
                                                                                                                                                                                                                                                                                          89;
                                                                                                                                                                                                                                                                                          Score 169.5; DB 22; pred. No. 5.1e-06; 9; Mismatches 193;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          domain'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      domain"
                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                          145;
                                                                                                                                                                                                                                                                                                                                                         515;
                                                                                                                                                                                                                                                                                       Gaps
                                                                                                125
                                                                                                                                                               87
                                                                                                                                                                                                                                                                                              27;
```

```
AAB82539
ID AAB8
XX AAB8
XX AAB8
XX Huma
XX Prot
KW FT Binc
FT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Вр
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Binding-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAB82539
                                                                                                                                                                                                                                     (UYCO-) UNIV CONNECTICUT HEALTH
                                                                                                                                                                                                                                                                                            20-JAN-2000; 2000US-0488393
                                                                                                                                                                                                                                                                                                                                           18-JAN-2001; 2001WO-US01781
                                                                                                                                                                                                                                                                                                                                                                                                                                                     WO200152791-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Binding-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       immunotherapy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Protein disulfide isomerase; PDI; human; heat shock protein; HSP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Human protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          17-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAB82539 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             196
                                                                                                                                   2001-457506/49.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TEFPIIKMYKKG--ENPVSYAGMLGTKDLLKFIQLNRISYPVNITSIQEAEEYLSGEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LEDLONIENALKGKANIIFSYVRAIGIPEHRAVMEAGFVYGTTYQFVLTTEIALLESIGS 185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGFPTLRLYPAGAKDSPIEYSGSRTVEDLANFVKENG-KHNVDALNVASEETQEGGDV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APWCGHCKALAPKYDELAALY-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGWQAVSMAFLQSYIDVAVKLKGTSTMLLTRINCADWSDVCTK------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EDEDNDMEGPDIDVQDDEVAETVFRDRKRKLPLELTVELTEETFNATVMASDSIVL--FY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LNLDSQKFPAFAIQDPAKNAKYPYDQAKELNADEVEKFI----QDVLDGKVEPSIKSEPVP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LLLLRDSLEVNIPQD----ANVVFKRAEE--GVPVEFLVLHDVDLIISHVENNMHIEEIQ 339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ETYSG-YIGAGVPLAYIFA-ETKEEREKYTEDFKPIAQKHKGAINIATIDAKMFGAHAGN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QQVSTVHLQLGLPLVFIVSQQATYEADRRTAEW-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EDVEYAHLY --FFHCKLVLD--LTQQCRRTLMEQPLTTLNIHLFIKTMKAPLLTEVAEDP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LEEIKTMDKI------VVIGYIPSDDQETYQAFEKYAESQRDNYLFAATDDAAIAKSEGV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EQPSIV-LYKDFDEKKAVYDGEIEQEA------IHSWVKSASTPLVGEIG--P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         disulfide isomerase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         therapy; cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note= "
204..491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note= "
213..351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note=
5..232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       "peptide-binding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "peptide-binding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "peptide-binding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           "peptide-binding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            infection; vaccine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ADHPDLAAKVTIAKIDATANDVPDPI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       domain'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              domain"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  domain"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                domain"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -VAWRLLG-KAGV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VNQ----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                239
```

Pharmaceutical composition, used to treat or prevent infection cancer, comprises a complex comprising a heat shock protein-bif fragment associated with a molecule displaying antigenicity of infectious agent or cancer cell -

1+

```
AAB43424
ID AAB4
XX
AC AAB4
XX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Dβ
                                                                                       RESULT 13
                                                                                                                                            В
                                                                                                                                                                      γ
                                                                                                                                                                                                               Ъ
                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           рЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          treating or preventing cancer/infectious disease involve culturing a cancer cell/infected cell transformed with a nucleic acid encoding a HSP peptide-binding domain, recovering complexes of the HSP fragments noncovalently associated with peptides from the cancer cell/infected cell, and administering the recovered complexes. These methods can use PDI peptide-binding fragments comprising amino acids 5-232, 213-351 and 204-491 of the present
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  acid) peptides, and a larger fragment, including amino acids 204-491, which is able to bind polypeptides of 25-50 amino acids. An even larger fragment, including amino acids 1-370 is required for more complex substrates, such as larger polypeptides. The invention relates to complexes of peptide-binding fragments of HSPs with antigenic molecules and their use in immunotherapy for the treatment of infectious diseases and cancer. Claimed methods of
                  AAB43424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             contribute to peptide binding, including a fragment that includes amino acids 213-351 and is capable of binding short (10-15 amino
                                                    AAB43424 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (PDI), a heat shock protein (HSP) involved in the folding disulfide-bonded proteins. PDI contains various domains
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Claim 53;
                                                                                                                                            433
                                                                                                                                                                                                                   386
                                                                                                                                                                                                                                                     398
                                                                                                                                                                                                                                                                                        355
                                                                                                                                                                                                                                                                                                                          340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      126
                                                                                                                                                                                                                                                                                                                                                               298
                                                                                                                                                                                                                                                                                                                                                                                                 286
                                                                                                                                                                                                                                                                                                                                                                                                                                    240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             15 VIMCIFYMPTVNSLPELSPQKYFSTLQPGLEELNEAVRPLQDYGISVAKVNCVKEEISRY 74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LEDLQNIENALKGKANIIFSYVRAIGIPEHRAVMEAGFVYGTTYQFVLTTEIALLESIGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LVLAEFFAPWCGHCKALAP-KY-------EEAATELKAKNIPLVKVDCTAEE----
                                                                                                                                          TGFPTLRLYPAGAKDSPTEYSGSRTVEDLANFVKENG-KHNVDALNVASEETQEGGDV
                                                                                                                                                                            TEFPIIKMYKKG--ENPVSYAGMLGTKDLLKFIQLNRISYPVNITSIQEAEEYLSGEL 499
                                                                                                                                                                                                                                                   AGWQAVSMAFLQSYIDVAVKLKGTSTMLLTRINCADWSDVCTK-------QNV 443
                                                                                                                                                                                                                                                                                                                          EDEDNDMEGPDIDVQDDEVAETVFRDRKRKLPLELTVELTEETFNATVMASDSIVL--FY
                                                                                                                                                                                                                                                                                                                                                             LNLDSQKFPAFAIQDPAKNAKYPYDQAKELNADEVEKFI----QDVLDGKVEPSIKSEPVP
                                                                                                                                                                                                                                                                                                                                                                                               LLLLRDSLEVNIPQD----ANVVFKRAEE--GVPVEFLVLHDVDLIISHVENNMHIEEIQ
                                                                                                                                                                                                                                                                                                                                                                                                                                   ETYSG-YIGAGVPLAYIFA-ETKEEREKYTEDFKPIAQKHKGAINIATIDAKMFGAHAGN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      QQVSTVHLQLGLPLVFIVSQQATYEADRRTAEW------VAWRLLG-KAGV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EQPSIV-LYKDFDEKKAVYDGEIEQEA-----IHSWVKSASTPLVGEIG--P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LEEIKTMDKI-----VVIGYIPSDDQETYQAFEKYAESQRDNYLFAATDDAAIAKSEGV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ----DLCRSQGVEGYPTLKIFRGVDSSKPYQGARQTESIVSYMIKQSLPAVSSVNE-EN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CGKEKDLMKAYLFKGNILLREF------PTDTLFDVNAIVAHVLFALL--FSEVKYITN 125
                                                                                                                                                                                                                 APWCGHCKALAPKYDELAALY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EDVEYAHLY - - FFHCKLVLD - - LTQQCRRTLMEQPLTTLNIHLF IKTMKAPLLTEVAEDP
                                                                                                                                                                                                                                                                                        ESQ----EGP-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Fig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3; 106pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ξ
                                                    Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4.1%;
20.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        is that of human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; 68
                                                    544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 169.5; I
Pred. No. 5.1e
89; Mismatches
                                                                                                                                                                                                                                                                                      -----VTV-VVAHSYKDLVIDNDKDVLLEFY 385
                                                    B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  uman protein disulfide isomerase involved in the folding of
                                                                                                                                                                                                               ADHPDLAAKVTIAKIDATANDVPDPI 432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .1e-06;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                193;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  145;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 195
                                                                                                                                                                                                                                                                                                                          397
                                                                                                                                                                                                                                                                                                                                                             354
                                                                                                                                                                                                                                                                                                                                                                                                                                   297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  27;
```

В δõ 밁 Qy

125

67

432 ADWSDVCTKQNVTEFPIIKMYKKGENPVSYAGMLGTKDLLKFIQLNRISYPVNITSIQEA 491

LELTDDNFESRISDTGSAGLMLVEFFAPWCGHCKRLAPEYEAAATRLKG--IVPLAKVDC

TANTINTCNKYGVSGYPTLKIFRDGEEAGAYDGPRTADGIVS--HLKKQAGPASVPLRTEE

376 VELTEETFNATVMASDS----IVLFYAGWQAVSMAFLQSYIDVAVKLKGTSTMLLTRINC

Matches Query Match Best Local

l Similarity 64; Conser

Conservative

59;

4.1%;

Score 169.5; Pred. No. 5.0 Mismatches

.6e-06; les 127;

Indels Length

Gaps 431 124

10;

DB 21;

544; ω 3 '

```
or inhibiting the proliferation, differentiation or mobilisation of immune cells, to treat disorders of haematopoietic cells, autoimmune disorders, allergic reactions, graft versus host disease and organ rejection, modulate haemostatic or thrombolytic activity, modulate
                                                                                                                                                                                                                        polynucleotides and polypeptides can be used for preventing, treating or ameliorating medical conditions and diagnosing pathological conditions. Polynucleotides, polypeptides, antibodies, agonists and antagonists from the present invention may be used to treat immune disorders by activating
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          antiinflammatory; antithyroid; antiallergic; antibacterial; cardiant dermatological; neuroprotective; thrombolytic; coagulant; nootropic; vasotropic; antipsoriatic; antiangiogenic; generally; inflammatio immune disorder; haematopoietic cell disorder; autoimmune disorder; haematopoietic cell disorder; autoimmune disorder; allergic reaction; graft versus host disease; organ rejection; haemostatic; thrombolytic; cardiovascular disorder; infection;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          antidiabetic; antiacth
                                                   agon1sts and antagon1sts may be also be used in AAC78457 and AAB44240 represent sequences used in
                                                                                                                                                                                                                                                                                                        antiinflammatory; antithyroid; antiallergic; antibacterial; antiviral; dermatological; neuroprotective; cardiant; thrombolytic; coagulant; nootropic; vasotropic; antipsoriatic and antiangiogenic. The
Sequence
                                                                             inflammation, cancers, cardiovascular disorders, neurological disease and bacterial or viral infections. The peptides, nucleotides, antibodies, agonists and antagonists may be also be used in drug screens. AAC78449 to
                                                                                                                                                                                                                                                                                                                                                                        antidiabetic; antiasthmatic; antirheumatic; antiarthritic;
                                                                                                                                                                                                                                                                                                                                                                                       AAC77607 to AAC78448 encode the human cancer associated proteins given in AAB43398 to AAB44239. The proteins can have activities based on the tissues and cells the genes are expressed in Example of activities include: cytostatic; proliferative vulnerary; immunomodulator;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                useful
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        N-PSDB; AAC77633.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Novel isolated nucleic acids comprising sequences encoding peptides useful for treating or diagnosing \mathbf{e}.\mathbf{g}. cancer -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Rosen CA, Ruben SM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      12-MAR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            08-MAR-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       21-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WO200055350-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             neurological disease; drug screening.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human cancer associated protein sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      08-FEB-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (HUMA-) HUMAN
                                      present invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2000-587533/55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Page 1424-1426; 2352pp; English.
  544 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2000WO-US05882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       tostatic; proliferative; vulnerary; immunomodulator;
antiasthmatic; antirheumatic; antiarthritic; antiviral;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENOME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  associated gene; cancer antigen; detection;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   99US-0124270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SCI INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQ ID NO:869
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gene therapy; inflammation;
                                                         the exemplification
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cardiant;
                                                         AAC78449 to fication of
```

Š

Š B Ş В

밁

```
RESULT 14
ABP41717
                                                                                  treating, prognosing or preventing various ovary and/or breast-related disorders. Such conditions include ovarian cancer and breast cancer, an metastatic tumours of ovarian or breast origin, reproductive system disorders (e.g., infertility, disorders of pregnancy, anovulation, polycystic ovary syndrome, ovarian cysts, and dysmenorrhoea), endocrine disorders, infections (e.g., chamydia, HIV, toxoplasmosis, and toxic than the contract of the co
                                                                                                                                                                                                                                                                                                                                        The invention relates to 2175 novel human ovarian antigens (ABP41054-ABP43228) and to cDNAs encoding them (ABC94131-ABC56305), and also encompasses polypeptides 90% identical and polynucleotides 95% identical to the sequences of the invention. The invention additionally relates to recombinant vectors and host cells comprising human ovarian antigen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Human; ovarian antigen; ovary; ovarian; breast; cancer; tumour; ovarian cancer; breast cancer; tumour; reproductive system disorder; infertility; pregnancy disorder; anovulation; polycystic ovary syndrome; PCOS; ovarian cyst; dysmenorrhoea; endocrine disorder; infection; inflammatory condition; immune disorder; blood disorder; cardiovascular disorder; respiratory disorder; neurological disorder; gastrointestinal disorder; urinary system disorder; drug screening; gene therapy; chromosome mapping; forensic analysis; antibody preparation; cytostatic; immunomodulatory; neuroprotective; antibody preparation; cytostatic; immunomodulatory; neuroprotective;
                               vaginitis),
                                                                  shock
                                                                                                                                                                                                                                                                               polynucleotides, antibodies against human ovarian antigens, and to of ovarian antigen polynucleotides and polypeptides in diagnosing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           neurological diseases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ovarian cancer), immune disorders,
neurological diseases -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Isolated nucleic acid molecules encoding novel ovarian polypeptides, useful in the prevention, treatment and diagnosis of cancer (e.g. ovarian cancer), immune disorders, cardiovascular disorders and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            07-JUN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        07-JUN-2001; 2001WO-US18569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    03-JAN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WO200200677-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ABP41717 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               N-PSDB; ABQ54794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (HUMA-) HUMAN GENOME SCI INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  antiinflammatory;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               22-AUG-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ABP41717;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ---LIQGKDLLIAYYDVDYEKNAKGSNYWRNRVMMVAKKFLDA 332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TKYAASLPALLLAR--HTEGKIESIPLASTHAQ----DIVQIITDALLEMFPEITVENLP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2002-147878/19.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SYFRLQ-KPLLILFSD-----GTVNPQYKKAILTLVKQKYLDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NEYDDNGEGIILFRPSHLTNKFEDKTVAYTEQKMTSGKIKKFIQENIFGICPHMTEDNKD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EEYLSGELYKDLILYSSVSVLGLFSPTMKTAKEDFSEAGNYLKGYVITGIYSEEDVLLLS
                                                           syndrome), inflammatory conditions (e.g., mastitis,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CE,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ovarian antigen HPDRV42,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Rosen CA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -FKKFISDKDASIVGFFDDSFSEAHSEFLKAASNLRD---NYRFAHTNVESLV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2000US-209467P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ħ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gynaecological;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2849;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2922pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       549
                            (e.g.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQ ID NO: 2849.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  reproductive;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     chromosome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 642
                                                        oophoritis
                                                                                                                       endocrine
                                                                                                                                                                                                                                                                                                                  the use
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           551
                                                               and
```

```
KESULT 15
AAR70329
   Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             immunodeficiencies, autoimmune oophoritis, systemic lupus erythematosus), blood-related disorders (e.g., anaemia), cardiovascular disorders, respiratory disorders, neurological disorders, gastrointestinal disorders and urinary system disorders. Ovarian antigen polypeptides and polynucleotides may also be used in screening for compounds which modulate ovarian antigen expression or activity. The polynucleotides may further be used for gene therapy, chromosome mapping, in the identification of individuals and in forensic analysis, and the polypeptides may be used as food additives or to prepare antibodies polypeptides may be used as food additives or to prepare antibodies useful in disease diagnosis, drug trargeting and phenotyping. The present sequence represents a human ovarian antigen of the invention. Note: The sequence data for this patent did not form part of the printed appecification, but was obtained in electronic format directly from WIPO
Hirai H,
                                                                                                                                                                                                                                                                                                                                       Human phospholipase
                             (SHIO ) SHIONOGI & CO
                                                             24-SEP-1993;
                                                                                           22-SEP-1994;
                                                                                                                          30-MAR-1995
                                                                                                                                                       W09508624-A
                                                                                                                                                                                                   Protein
                                                                                                                                                                                                                                             Key
                                                                                                                                                                                                                                                                                                        Phospholipase C;
                                                                                                                                                                                                                                                                                                                                                                     22-NOV-1995
                                                                                                                                                                                                                                                                                                                                                                                                                               AAR70329 standard;
                                                                                                                                                                                                                               Peptide
                                                                                                                                                                                                                                                                           Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                   AAR70329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             376 VELTEETFNATVMASDS----IVLFYAGWQAVSMAFLQSYIDVAVKLKGTSTMLLTRINC 431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TANTNTCNKYGVSGYPTLKIFRDGEEAGAYDGPRTADGIVS--HLKKQAGPASVPLRTEE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ---LIQGKDLLIAYYDVDYEKNAKGSNYWRNRVMMVAKKFLDA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SYFRLQ-KPLLILFSD-----GTVNPQYKKAILTLVKQKYLDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NEYDDNGEGIILFRPSHLTNKFEDKTVAYTEQKMTSGKIKKFIQENIFGICPHMTEDNKD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TKYAASLPALLLAR--HTEGKIESIPLASTHAQ----DIVQIITDALLEMFPEITVENLP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              E-----FKKFISDKDASIVGFFDDSFSEAHSEFLKAASNLRD---NYRFAHTNVESLV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EEYLSGELYKDLILYSSVSVLGLFSPTMKTAKEDFSEAGNYLKGYVITGIYSEEDVLLLS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ADWSDVCTKQNVTEFPIIKMYKKGENPVSYAGMLGTKDLLKFIQLNRISYPVNITSIQEA 491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LELTDDNFESRISDTGSAGLMLVEFFAPWCGHCKRLAPEYEAAATRLKG--IVPLAKVDC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                   (first
                                                             93JP-0238402
                                                                                           94WO-JP01572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AA;
                                                                                                                                                                                                                                 Location/Qualifiers
1..24
                                                                                                                                                                                                              /label=
                                                                                                                                                                                                                                                                                                         PLC; alpha; anti-inflammatory; cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                 Protein;
                                                                                                                                                                                                                                                                                                                                       C-alpha
                                                                                                                                                                                                                                                                                                                                                                   entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4.1%; 22.6%;
                                 LTD.
                                                                                                                                                                                                               signal_peptide
                                                                                                                                                                                   phospholipase_C-alpha
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           59;
                                                                                                                                                                                                                                                                                                                                                                                                                                 505
                                                                                                                                                                                                                                                                                                                                       (PLC-alpha).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 169.5;
Pred. No. 5.6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                               Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6e-06;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DВ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       , 23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             33;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             10;
```

```
Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          뫄
Search completed: March 13, 2003, 17:12:58 Job time: 45 secs
                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOX CCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
4.0%; Score 166.5; DB 16; Length 505;
Best Local Similarity 22.6%; Pred. No. 9.1e-06;
Matches 64; Conservative 59; Mismatches 127; Indels 33; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Claim 1; Page 21-24; 39pp; Japanese.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 1995-139593/18.
N-PSDB; AAQ86642.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAR70329 is human phospholipase C-alpha (PLC-alpha). PLC-alpha is useful as an anti-inflammatory and may also be used to measure
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Human phospholipase C-alpha and DNA encoding it - useful as anti inflammatory % \left( 1\right) =\left\{ 1\right\} =\left\{ 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cancer progression.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        552 TKYAASLPALLLAR--HTEGKIESIPLASTHAQ----DIVQIITDALLEMFPEITVENLP 605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 194 NEYDDNGEGIILFRPSHLTNKFEYKTVAYTEQKMTSGKIKKFIQENIFGICPHMTEDNKD 253
                                                                                                                                                                                                                                                                                                                                              ---LIQGKDLLIAYYDVDYEKDAKGSNYWRNRVMMVAKKFLDA 293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                505 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         10;
```

THIS PAGE BLANK (USPTO)

```
Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Post-processing:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Maximum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Minimum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB seq
                                                                                                                                                                                                  185
175.5
172.5
172.5
172.5
172.5
172.5
172.5
172.5
172.5
152.5
                                                                                                                                                                                                                                                                                                                                                                                                                                   Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Issued_Patents_AA:*
1: /cgn2_6/ptodata/2,
2: /cgn2_6/ptodata/2,
3: /cgn2_6/ptodata/2,
4: /cgn2_6/ptodata/2,
5: /cgn2_6/ptodata/2,
6: /cgn2_6/ptodata/2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-847-046-2
4142
1 MFSGFNVFRVGISFVIMCIF.....FKEAEKSFRRDKELGCSKVN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     262574 seqs,
                                                                                                                                                                                                                                                                                                                                                                                                                                   Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gapop 10.0 ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          March 13, 2003, 17:12:17; Search time 18 Seconds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Minimum Match 0%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GenCore version 5.1.4_p5_4578 Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /cgn2_6/ptodata/2/iaa/5A_COMB.pep:*
/cgn2_6/ptodata/2/iaa/5B_COMB.pep:*
/cgn2_6/ptodata/2/iaa/6A_COMB.pep:*
/cgn2_6/ptodata/2/iaa/6B_COMB.pep:*
/cgn2_6/ptodata/2/iaa/BCTUS_COMB.pep:*
/cgn2_6/ptodata/2/iaa/backfiles1.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                                                                                                                                                                                                                                                                                     DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      29422922 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gapext 0.5
                        US-08-068-395A-1
US-08-464-365-3
US-08-464-365-3
US-08-557-122A-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (without alignments)
1319.128 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                 Description
           Sequence
Sequence
                                                         Sequence
Sequence
Sequence
                                                                                                                   Sequence
Sequence
                                                                                                                                                Sequence
Sequence
Sequence
Sequence
                                                                                                                                                                                                             Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                          Sequence
Sequence
                                                                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
Sequence
                                         Sequence
                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                         34, Appli
34, Appli
34, Appli
2, Appli
35, Appli
35, Appli
32, Appli
32, Appli
32, Appli
32, Appli
32, Appli
33, Appli
29, Appli
29, Appli
33, Appli
33, Appli
347, Appli
37, Appli
37, Appli
37, Appli
37, Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  807
                                                                                                                                                                                                                                                                       Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 1
US-08-068-395A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                 STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                ADDRESSEE:
```

51	ΔΔ	Δ W	42	41	40	39	38	37	36	ω 5	34	33	32	3 11	30	29	28
129.5	129 5	130	131.5	131.5	132	132	133	133.5	133.5	135	135	135	135	135	135	135.5	135.5
ω . 	ب ب	ω 1-			3.2							3.3	ω .ω	ω. ω	3. 3	ω .ω	ω ω
281	281	531	364	364	510	510	870	638	638	510	510	497	491	472	468	509	509
4	J	N	ω	س	4	ν	4	4	N	4	2	4	1	4	4	4	N
US-09-262-666-5	115-08-557-100a-5	US-08-923-536A-12	US-09-181-318-4	US-08-650-275-4	US-09-262-666-36	US-08-557-122A-36	US-09-134-001C-4959	US-09-262-666-38	US-08-557-122A-38	US-09-262-666-28	US-08-557-122A-28	US-08-874-102-47	US-07-872-673B-3	US-08-874-102-55	US-08-874-102-33	US-09-262-666-27	US-08-557-122A-27
Sequence 5,	Segmence 5	Sequence 12,	Sequence 4,	Sequence 4,	Sequence 36,	Sequence 36,	Sequence 495	Sequence 38,	Sequence 38,	Sequence 28, Appl	Sequence 28,	Sequence 47,	Sequence 3, Appl	Sequence 55,	Sequence 33,	Sequence 27,	Sequence 27,

ALIGNMENTS

```
COUNTR:
2202
ZIP: 2222
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1
CURRENT APPLICATION DATA:
APPLICATION UMBER: US/08/068,395A
FILING DATE: 1930527
FILING DATE: 1930527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sequence 1, Application US/08068395A Patent No. 5496719
                                                                                                                                                                                            FILING DATE: 19930527

CLASSIFICATION: 435

PRIOR APPLICATION DATA:
APPLICATION NUMBER: JP 4-135254

FILING DATE: 7-MAY-1992

PRIOR APPLICATION DATA:
APPLICATION NUMBER: JP 5-44013

FILING DATE: 04-MAR-1993
                                                             FILING DATE: 04-MAR-1993
ATTORNEY/AGENT INFORMATION:
NAME: Oblon, No. 5496719man F.
REGISTRATION NUMBER: 24,618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: KAJINO, TSUTOMU
APPLICANT: IMAEDA, TAKAO
APPLICANT: IMAEDA, TAKAO
APPLICANT: SARAI, KIYOKO
TITLE OF INVENTION: POLYPEPTIDE POSSESSING PROTEIN DISULFIDE
TITLE OF INVENTION: ISOMERASE ACTIVITY GENE ENCODING THE SAME AND PROCESS FOR
TITLE OF INVENTION: PRODUCING THE SAME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: SUGIYAMA, HIDEHIKO
APPLICANT: IDEKOBA, CHIE
APPLICANT: HOSHINO, FUMIHIKO
APPLICANT: HIRAI, MASANA
APPLICANT: KAJINO, TSUTOMU
                       TELECOMMUNICATION INFORMATION:
                                                                                                                                                                           FILING DATE: 04-MAR-
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NUMBER OF SEQUENCES: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CITY: Arlington STATE: Virginia COUNTRY: U.S.A.
                                   REFERENCE/DOCKET NUMBER: 68-
TELEPHONE:
                                                                                                                                                        APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     E: P.C.
1755 S. Jefferson Davis Highway, Suite 400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          YAMADA, YUKIO
ASAMI, OSAMU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OBLON,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SPIVAK, McCLELLAND, MAIER & NEUSTADT,
                                                                                                                                                        JP 5-44014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               I
                                               68-228-0
                                                                                                                                                                                                                                                                                                                                                                                                                                  25
```

```
US-08-464-365-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; TOPOLOGY: linear; MOLECULE TYPE: protein US-08-068-395A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                            Sequence 1, Application US/08464365 Patent No. 5700659
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                            GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELEFAX: (703) 413-2220
TELEX: 248855 OPAT UR
INFORMATION FOR SEQ ID NO:
                                                                           APPLICANT: SARAI, KIYOKO
TITLE OF INVENTION: POLYPEPTIDE POSSESSING PROTEIN DISULFIDE
TITLE OF INVENTION: ISOMERASE ACTIVITY GENE ENCODING THE SAME AND PROCESS FOR
TITLE OF INVENTION: PRODUCING THE SAME
                                                                                                                                                                                                                                                                APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                       APPLICANT:
APPLICANT:
                                                                                                                                                                                                             APPLICANT:
                                                        NUMBER OF SEQUENCES: 1
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               246 TVHLQLGLPLVFIVSQQA------TYEADRRTAEW--VAWRLLG-KAGVLLLLR 290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  126
   STREET:
                     ADDRESSEE: OBLON, SPIVAK, McCLELLAND, MAIER & NEUSTADT ADDRESSEE: P.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Match 4.5%;
Local Similarity 21.9%;
les 112; Conservative 79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61 --EETDLCQQHGVEGYPTLKVFRGLDNVSPYKGQRKAAAITSYMIKQSLPAVSEVTK-DN 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             20 LVLAEFFAPWCGHCKALAP------EYEEAATTLKEKNIKLAKVDCT-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                15 VIMCIFYMPTVNSLPELSPQKYFSTLQPGLEELNEAVRPLQDYGISVAKVNCVKEEISRY 74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LAPKYEELGALYAKSEFKDRVVIAKVD-ATANDV--PDEIQGFPTIKLYPAGAKGQPVTY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DKFPAFAIQEVAKNQKFPFDQEKE-ITFEAIKAFVDDFVAGKIEPSIKSEPIPEKQ----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          D-YMSAGIPLAYIFAETAEERKELSDKLKPIAEAQRGVINFGTIDAKAFGAHAGNLNLKT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EDVEYAHLYFFHCKLVLDLTQQCRRTLMEQPLTTLNIHLFIKTMKAPLLTEVAEDPQQVS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LEEFKKADKA------VLVAYVDASDKASSEVFTQVAEKLRDNYPFGSSSDAALAEAEGV 171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LEDLQNIENALKGKANIIFSYVRAIGIPEHRAVMEAGFVYGTTYQFVLTTEIALLESIGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGKEKDLMKAYLFKGNILLREF-----PTDTLFDVNAIVAHVLFALL--FSEVKYITN 125
                                                                                                                                                                                                                                                                                                                                                                                                                                                        SGSRTVEDLIKFIAENG-KYKAAIS--EDAEE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGMLGTKDLLKFIQLNRISYPVNITSIQEAEE 493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FLQSYIDVA---VKLKGTSTMLLTRINCADWSDVCTKQNVTEFPIIKMYKKGE--NPVSY 461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EGPDIDVQDDEVAETVFRDRKRKLPLELTVELTEETFNATVMASDSIVLFYAGWQAVSMA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DSLEV----NIPQDANVVFKRAEEGVPVEFLVLHDVDLIISHVENNMHIEEIQEDEDNDM 346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EGPVTVVVAKNYNEIVLDDTK------
                                                                                                                                                   HIRAI, MASANA
KAJINO, TSUTOMU
IMAEDA, TAKAO
SARAI, KIYOKO
 1755 S.
                                                                                                                                                                                                                             IDEKOBA, CHIE
HOSHINO, FUMIHIKO
                                                                                                                                                                                                                                                                  SUGIYAMA, HIDEHIKO
                                                                                                                                                                                                                                                                                                     YAMADA, YUKIO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -----AIVLYKDFDEGKAVFSEKFEVEAIEKFAKTGATPLIGEIG--PETYS
Jefferson Davis Highway, Suite 400
                                                                                                                                                                                                                                                                                     OSAMU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            <u>ب</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       79;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 185; DB 1;
Pred. No. 1.7e-08;
9; Mismatches 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                        456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   213; Indels 108;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 485;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -DVLIEFYAPWCGHCKA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     22;
                                                                                                                                                                                                                                                                ğ
                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                  γQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Вb
                                  Ş
                                                                         B
                                                                                                              Š
                                                                                                                                                     В
                                                                                                                                                                                                                             Ъ
                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                망
                                                                                                                                                                                      Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; MOLECULE TYPE: protein US-08-464-365-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches 112;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             INFORMATION FOR SEQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRIOR APPLICATION DATA:
APPLICATION NUMBER: JP 4-
FILING DATE: 27-MAY-1992:
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM FC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE/DOCKET NUMBER: 68
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATTORNEY/AGENT INFORMATION:
NAME: Oblon, No. 5700659man F.
REGISTRATION NUMBER: 24,618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FILING DATE: 04-MAR-1993 PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE CHARACTERISTICS:
 371
                                      407
                                                                           334
                                                                                                                347
                                                                                                                                                     279
                                                                                                                                                                                          291
                                                                                                                                                                                                                               220
                                                                                                                                                                                                                                                                    246
                                                                                                                                                                                                                                                                                                       172
                                                                                                                                                                                                                                                                                                                                            186
                                                                                                                                                                                                                                                                                                                                                                                 118
                                                                                                                                                                                                                                                                                                                                                                                                                    126
                                                                                                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER: JP 5 FILING DATE: 04-MAR-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CITY: Arlington
STATE: Virginia
COUNTRY: U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                20 LVLAEFFAPWCGHCKALAP-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   15 VIMCIFYMPTVNSLPELSPQKYFSTLQPGLEELNEAVRPLQDYGISVAKVNCVKEEISRY 74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TYPE: amino acid TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LENGTH: 485 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER:
LAPKYEELGALYAKSEFKDRVVIAKVD-ATANDV--PDEIQGFPTIKLYPAGAKGQPVTY
                                      FLQSYIDVA---VKLKGTSTMLLTRINCADWSDVCTKQNVTEFPIIKMYKKGE--NPVSY 461
                                                                                                                                                                                                                               D-YMSAGIPLAYIFAETAEERKELSDKLKPIAEAQRGVINFGTIDAKAFGAHAGNLNLKT
                                                                                                                                                                                                                                                                  TVHLQLGLPLVFIVSQQA-----
                                                                                                                                                                                                                                                                                                     KAP-----AIVLYKDFDEGKAVFSEKFEVEAIEKFAKTGATPLIGEIG--PETYS
                                                                                                                                                                                                                                                                                                                                  EDVEYAHLYFFHCKLVLDLTQQCRRTLMEQPLTTLNIHLFIKTMKAPLLTEVAEDPQQVS
                                                                                                                                                                                                                                                                                                                                                                               LEEFKKADKA-----VLVAYVDASDKASSEVFTQVAEKLRDNYPFGSSSDAALAEAEGV 171
                                                                                                                                                                                                                                                                                                                                                                                                                                                       --EETDLCQQHGVEGYPTLKVFRGLDNVSPYKGQRKAAAITSYMIKQSLPAVSEVTK-DN 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGKEKDLMKAYLFKGNILLREF-----PTDTLFDVNAIVAHVLFALL--FSEVKYITN 125
                                                                           EGPVTVVAKNYNEIVLDDTK-----
                                                                                                              EGPDIDVQDDEVAETVFRDRKRKLPLELTVELTEETFNATVMASDSIVLFYAGWQAVSMA 406
                                                                                                                                                   DKFPAFAIQEVAKNQKFPFDQEKE-ITFEAIKAFVDDFVAGKIEPSIKSEPIPEKQ----
                                                                                                                                                                                        DSLEV----NIPQDANVVFKRAEEGVPVEFLVLHDVDLIISHVENNMHIEEIQEDEDNDM
                                                                                                                                                                                                                                                                                                                                                                                                                  LEDLONIENALKGKANIIFSYVRAIGIPEHRAVMEAGFVYGTTYQFVLTTEIALLESIGS 185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NE: (703) 413-3000
: (703) 413-2220
248855 OPAT UR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4.5%; Suc. No. 1.
21.9%; Pred. No. 1.
1 ve 79; Mismatches 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JP 5-44014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JP 5-44013
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JP 4-135254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US/08/464,365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      24,618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          68-228-0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 185; DB 1;
Pred. No. 1.7e-08;
                                                                                                                                                                                                                                                                  -----TYEADRRTAEW--VAWRLLG-KAGVLLLLR 290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ---EYEEAATTLKEKNIKLAKVDCT-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 485;
                                                                           -DVLIEFYAPWCGHCKA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels 108;
```

Gaps

22;

60

427

346

278

333

245

219

٠,

```
뫄
                        Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                          US-08-068-395A-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-08-068-395A-3
                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence
                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Patent No.
                                                                                                                                                                        TELEFAX: (703) 413-2220
TELEX: 248855 OPAT UR
INFORMATION FOR SEQ ID NO: 3:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2IP: 4244
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: IBM PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE OF INVENTION:
TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOFTWARE: PatentIn Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
                                                                                                                      MOLECULE TYPE:
                                                                                                                                                                                                                            TELEPHONE: (703) 413-3000
                                                                                                                                                                                                                                                                ATTORNEY/AGENT INFORMATION:
NAME: Oblon, No. 5496719man F.
REGISTRATION NUMBER: 24,618
                                                                                                                                                                                                                                                                                                                     PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                           PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STREET: 1755 S. CITY: Arlington STATE: Virginia
 40
                                                                                                                                 TYPE: amino acid
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: FILING DATE: 19930
                          15 VIMCIFYMPTVNSLPELSPQKYFSTLQPGLEELNEAVRPLQDYGISVAKVNCVKEEISRY 74
                                                                                                                                                        LENGTH:
                                                                                                                                                                                                                                                REFERENCE/DOCKET NUMBER: 68
                                                                                                                                                                                                                                                                                                            FILING DATE:
                                                                                                                                                                                                                                                                                                                                                 FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: JP 4
FILING DATE: 27-MAY-1992
                                                                                                                                                                                                                                                                                                                                                                                                                              CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3, A.
No. 549671
LVLAEFFAPWCGHCKALAP-----EYEEAATTLKEKNIKLAKVDCT----
                                                    cal Similarity
112; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SGSRTVEDLIKFIAENG-KYKAAIS--EDAEE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGMLGTKDLLKFIQLNRISYPVNITSIQEAEE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Application US/08068395A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3: P.C.
1755 S. Jefferson Davis Highway, Suite 400
                                                                                                                                                           505 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KAJINO, TSUTOMU
IMAEDA, TAKAO
SARAI, KIYOKO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SUGIYAMA, HIDEHIKO IDEKOBA, CHIE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ASAMI, OSAMU
                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HIRAI, MASANA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HOSHINO, FUMIHIKO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AMADA, YUKIO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT
                                                                                                                                                                                                                                                                                                        UMBER: JP 5-44014
04-MAR-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                          19930527
                                                                                                                     protein
                                                                                                                                                                                                                                                                                                                                                04-MAR-1993
                                                                4.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   POLYPEPTIDE POSSESSING PROTEIN DISULFIDE ISOMERASE ACTIVITY GENE ENCODING THE SAME AND PROCESS FOR PRODUCING THE SAME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        10
                                                                                                                                                                                                                                                                                                                                                                                                     JP 4-135254
                                                                                                                                                                                                                                                                                                                                                             JP 5-44013
                                                                                                                                                                                                                                                                                                                                                                                                                                                       US/08/068,395A
                                                79;
                                                                                                                                                                                                                                                       68-228-0
                                                  Score 185; DB 1; Pred. No. 1.9e-08; 9; Mismatches 213;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  493
                                                                          Length 505;
                                                    Indels 108;
                                                 Gaps
                                                    22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-08-464-365-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 3, Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                       GENERAL
           PRIOR APPLICATION DATA:
APPLICATION NUMBER: JP 4
FTI.ING DATE: 27-MAY-1992
                                                                                                                                                                                                                                                                                                                                                           APPLICANT:
                                                                                         SOFTWARE: Patentin Rel CURRENT APPLICATION DATA:
                                                                                                                                             COMPUTER READABLE FORM;
MEDIUM TYPE: Floppy disk
 PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                  CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
                                                                                                                                                                                                                                                                                NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                  APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT:
                                                                                                                                                                                                                                                                                                                                                APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 75
                                                    CLASSIFICATION: 435
                                                                  FILING DATE:
                                                                              APPLICATION NUMBER:
                                                                                                                                                                                    COUNTRY:
                                                                                                                                                                                                              CITY: Arlington
                                                                                                                                                                                                                            STREET:
                                                                                                                                                                                                                                       ADDRESSEE:
                                                                                                                                                                                                                                                       ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                          13, AFE
No. 5700659
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EGPVTVVVAKNYNEIVLDDTK---
                                                                                                                                                                                                                                                                                                                                                                                                                                                       INFORMATION:
                                                                                                                                                                     RY: Virginia
RY: U.S.A.
22202
                                                                                                                                                                                                                          E: P.C.
1755 S.
                                                                                                                                                                                                                                                                                                                                                                                                                           YAMADA, YUKIC
ASAMI, OSAMU
                                                                                                                                                                                                                                                                                                                                           KAJINO, TSUTOMU
IMAEDA, TAKAO
                                                                                                                                                                                                                                                                                                                                                                        HIRAI, MASANA
                                                                                                                                                                                                                                                                                                                                                                                                               SUGIYAMA, HIDEHIKO
                                                                                                                                                                                                                                                                                                                                  SARAI, KIYOKO
                                                                                                                                                                                                                                                                                                                                                                                       HOSHINO, FUMIHIKO
                                                                                                                                                                                                                                                                                                                                                                                                 IDEKOBA, CHIE
                                                                                                                                                                                                                          Jefferson
                                                                                                                                                                                                                                                                                                                                                                                                                                          YUKIO
                                                                                                                                                                                                                                                                                  10
```

```
TITLE OF INVENTION: POLYPEPTIDE POSSESSING PROTEIN DISULFIDE
TITLE OF INVENTION: ISOMERASE ACTIVITY GENE ENCODING THE SAME AND PROCESS FOR
TITLE OF INVENTION: PRODUCING THE SAME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      240 D-YMSAGIPLAYIFAETAEERKELSDKLKPIAEAQRGVINFGTIDAKAFGAHAGNLNLKT
                                                                COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: PatentIn Release #1.0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      81 -- EETDLCQQHGVEGYPTLKVFRGLDNVSPYKGQRKAAAITSYMIKQSLPAVSEVTK-DN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SGSRTVEDLIKFIAENG-KYKAAIS--EDAEE 476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGMLGTKDLLKFIQLNRISYPVNITSIQEAEE 493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LAPKYEELGALYAKSEFKDRVVIAKVD-ATANDV--PDEIQGFPTIKLYPAGAKGQPVTY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FLQSYIDVA----WKLKGTSTMLLTRINCADWSDVCTKQNVTEFPIIKMYKKGE---NPVSY 461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DKFPAFAIQEVAKNQKFPFDQEKE-ITFEAIKAFVDDFVAGKIEPSIKSEPIPEKQ----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DSLEV----NIPQDANVVFKRAEEGVPVEELVLHDVDLIISHVENNMHIEEIQEDEDNDM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TVHLQLGLPLVFIVSQQA------TYEADRRTAEW--VAWRLLG-KAGVLLLLR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CGKEKDLMKAYLFKGNILLREF-----PTDTLFDVNAIVAHVLFALL--FSEVKYITN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EGPDIDVQDDEVAETVFRDRKRKLPLELTVELTEETFNATVMASDSIVLFYAGWQAVSMA 406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EDVEYAHLYFFHCKLVLDLTQQCRRTLMEQPLTTLNIHLFIKTMKAPLLTEVAEDPQQVS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LEEFKKADKA-----VLVAYVDASDKASSEVFTQVAEKLRDNYPFGSSSDAALAEAEGV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LEDLQNIENALKGKANIIFSYVRAIGIPEHRAVMEAGFVYGTTYQFVLTTEIALLESIGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Application US/08464365
                                                                                                                                                                                                                                                                                                                                                                                                                              OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    --AIVLYKDFDEGKAVFSEKFEVEAIEKFAKTGATPLIGEIG---PETYS
US/08/464,365
                                                                                                                                                                                                                                                                                                                                                                 Davis Highway, Suite 400
                                                                       Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DVLIEFYAPWCGHCKA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            353
```

APPLICATION NUMBER: JP 5-FILING DATE: 04-MAR-1993 PRIOR APPLICATION DATA: APPLICATION NUMBER: JP 5-

JP 5-44014

JP 5-44013

```
US-08-627-907A-4
                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                       20
                                                                                                                                                                                                                                                                                                                                                                                               р
                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                              B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; MOLECULE TYPE: protein US-08-464-365-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REGISTRATION NUMBER: 24,618
REFERENCE/DOCKET NUMBER: 68-2
TELECOMMUNICATION INFORMATION:
TELEPHONE: (703) 413-3000
TELEPAS: (703) 413-2220
TELEPAS: (703) 413-2220
TELEPAS: 24885 OPAT UR
INFORMATION FOR SEQ ID NO: 3:
                                                                                                           Sequence 4, Application US/08627907A Patent No. 6060302 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
NUMBER OF SEQUENCES:
                                 TITLE OF INVENTION: HUMAN PHOSPHOLIPASE C-ALPHA TITLE OF INVENTION: SEQUENCE ENCODING THE SAME
                                                                    APPLICANT: HIRANO, Naoto APPLICANT: HIRAI, Hisamaru
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATTORNEY/AGENT INFORMATION:
NAME: Oblon, No. 5700659man F.
                                                                                                                                                                                                                                              448
                                                                                                                                                                                                                                                                                   462
                                                                                                                                                                                                                                                                                                                      391
                                                                                                                                                                                                                                                                                                                                                           407
                                                                                                                                                                                                                                                                                                                                                                                                354
                                                                                                                                                                                                                                                                                                                                                                                                                                      347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  246 TVHLQLGLPLVFIVSQQA-----TYEADRRTAEW--VAWRLLG-KAGVLLLLR 290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        81 -- EETDLCQQHGVEGYPTLKVFRGLDNVSPYKGQRKAAAITSYMIKQSLPAVSEVTK-DN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local Similarity 21.9 es 112; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LENGTH:
                                                                                                                                                                                                                                                                                                                      LAPKYEELGALYAKSEFKDRVVIAKVD-ATANDV--PDEIQGFPTIKLYPAGAKGQPVTY
                                                                                                                                                                                                                                            SGSRTVEDLIKFIAENG-KYKAAIS--EDAEE 476
                                                                                                                                                                                                                                                                               AGMLGTKDLLKFIQLNRISYPVNITSIQEAEE 493
                                                                                                                                                                                                                                                                                                                                                       FLQSYIDVA---VKLKGTSTMLLTRINCADWSDVCTKQNVTEFPIIKMYKKGE--NPVSY
                                                                                                                                                                                                                                                                                                                                                                                                EGPVTVVAKNYNEIVLDDTK - - -
                                                                                                                                                                                                                                                                                                                                                                                                                                  EGPDIDVQDDEVAETVFRDRKRKLPLELTVELTEETFNATVMASDSIVLFYAGWQAVSMA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DKFPAFAIQEVAKNQKFPFDQEKE-ITFEAIKAFVDDFVAGKIEPSIKSEPIPEKQ----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DSLEV----NIPQDANVVFKRAEEGVPVEFLVLHDVDLIISHVENNMHIEEIQEDEDNDM 346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 D-YMSAGIPLAYIFAETAEERKELSDKLKPIAEAQRGVINFGTIDAKAFGAHAGNLNLKT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EDVEYAHLYFFHCKLVLDLTQQCRRTLMEQPLTTLNIHLFIKTMKAPLLTEVAEDPQQVS 245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LEDLQNIENALKGKANIIFSYVRAIGIPEHRAVMEAGFVYGTTYQFVLTTEIALLESIGS 185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CGKEKDLMKAYLFKGNILLREF-----PTDTLFDVNAIVAHVLFALL--FSEVKYITN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LVLAEFFAPWCGHCKALAP------EYEEAATTLKEKNIKLAKVDCT------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VIMCIFYMPTVNSLPELSPQKYFSTLQPGLEELNEAVRPLQDYGISVAKVNCVKEEISRY 74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KAP-----AIVLYKDFDEGKAVFSEKFEVEAIEKFAKTGATPLIGEIG--PETYS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LEEFKKADKA-----VLVAYVDASDKASSEVFTQVAEKLRDNYPFGSSSDAALAEAEGV 191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             505 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            linear
ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        04-MAR-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4.5%; Score 185; DB 1; Length 505; 21.9%; Pred. No. 1.9e-08; tive 79; Mismatches 213; Indels 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                68-228-0
                                                    AND
                                                                                                                                                                                                                                                                                                                                                                                               DVLIEFYAPWCGHCKA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels 108;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                    406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                80
                                                                                                                                                                                                                                                                                                                                                                                               390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           22;
```

```
Q
                                                                                                                                                                                                                                                                                                                                                   뫄
                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                          US-08-557-122A-4
                                                                                                                                                                                                               RESULT 6
                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δã
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; MOLECULE TYPE: protein US-08-627-907A-4
                                                                                                                              Sequence 4, Application US/08557122A Patent No. 5879664 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local S
Matches 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          INFORMATION FOR SEQ ID NO:
                                                                      APPLICANT: Hjort, Ca
TITLE OF INVENTION:
NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REGISTRATION NUMBER: 27,794
REFERENCE/DOCKET NUMBER: SH
TELECOMMUNICATION INFORMATION:
                                                      CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE CHARACTERISTICS:
LENGTH: 505 amino acids
TYPE: amino acid
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR APPLICATION DATA:
APPLICATION NUMBER: JP 5
FILING DATE: 24-SEP-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FILING DATE: 22-SEP-1994 ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/JP94/01572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                   194
                                                                                                                                                                                                                                                                                                                                                                                                                                146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              432
                                                                                                                                                                                                                                                                       254 ---LLQGKDLLIAYYDVDYEKNAKGSNYWRNRVMMVAKKFLDA
                                                                                                                                                                                                                                                                                                                                                                                     552 TKYAASLPALLLAR--HTEGKIESIPLASTHAQ----DIVQIITDALLEMFPEITVENLP 605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         376 VELTEETFNATVMASDS----IVLFYAGWQAVSMAFLQSYIDVAVKLKGTSTMLLTRINC 431
STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADDRESSEE: c/o FISH & NEAVE STREET: 1251 Avenue of the Americas CITY: New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME: HALEY Jr., James F. REGISTRATION NUMBER: 27,7
                                      ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    28 LELTDDNFESRITDTGSSGLMLVEFFAPWCGHCKKLAPEYEAAATRLKG--IVPLAKVDC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COUNTRY:
                                                                                                                                                                                                                                                                                                           SYFRLQ-KPLLILFSD-----GTVNPQYKKAILTLVKQKYLDS 642
                                                                                                                                                                                                                                                                                                                                                 NKYDDDGEGITLFRPSHLTNKFEDKTVAYTEQKMTSGKIKRFIQENIFGICPHMTEDNKD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EEYLSGELYKDLILYSSVSVLGLFSPTMKTAKEDFSEAGNYLKGYVITGIYSEEDVLLLS 551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ADWSDVCTKONVTEFPIIKMYKKGENPVSYAGMLGTKDLLKFIQLNRISYPVNITSIQEA 491
                                                                                                                                                                                                                                                                                                                                                                                                                                EKFISDK-----DASVVGFFKDLFSEAHSEFLKAASNLRD---NYRFAHTNVESLV 193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TANTNTCNKYGVSGYPTLKIFRDGEESGAYDGPRTADGIVSHLKKQAGPASVPLKSEEEF 145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 66;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
  New
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (212)
(212) 59t
                405 Lexington Avenue, 64th Floor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                      No. 58796640 No. 5879664disk of No. 5879664th America, Inc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          596-9090
                                                                                                              Carsten Mailand
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4.2%; Score 175.5; DB 3; 23.3%; Pred. No. 1.4e-07; ative 56; Mismatches 128;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              596-9000
                                                                                            Fungal Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JP 5-238402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US/08/627,907A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SHGN-10
                                                                                              Disulfide Isomerase
                                                                                                                                                                                                                                                                         293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     505;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 33
;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                   253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9
```

```
RESULT 7
US-09-62-666-4
; Sequence 4, Application US/09262666
; Patent No. 6346244
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                           õ
                                                                                                                                                                                                                  Ъ
                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                               δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-08-557-122A-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity
Matches 105; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELEFAX: 212-878-9655
INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATTORNEY/AGENT INFORMATION:
NAME: Lambiris, Elias J.
REGISTRATION NUMBER: 33,728
REFERENCE/DOCKET NUMBER: 39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TELECOMMUNICATION INFORMATION: TELEPHONE: 212-867-0123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOFTWARE: PatentIn Rel
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER READABLE FORM:
                                                                                                                                                                                                                      385
                                                                                                                                                                                                                                                                                                 328
                                                                                                                                                                                                                                                                                                                                                                          291
                                                                                                                                                                                                                                                                                                                                                                                                              299
                                                                                                                                                                                                                                                                                                                                                                                                                                                 243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     148
                                                                                                                                             442
                                                                                                                                                                                                                                                                                                                                     345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       128 DLQNIENALKGKANIIFSYVRAIGIPEHRAVMEAGFVYGT-----TYQFVLTTEIALL 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              181 ESIGSEDVEYAHLYFFHCKLVLDLTQQCRRTLMEQPLTTLNIHLFIKTMKAPLLTEVAED 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: US/01 FILING DATE: 11-DEC-1995 CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            74 YCGKEKDLMKAY----LFKGNILLREFPTDTLFDVNAIVAHVLFALLFSEVKYIT---NLE 127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           48 LVLAEFFAPWCGHCKALAP-KY------EQAATELKEKNIPLVKVDCTEEEALCR 95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              15 VIMCIFYMPTVNSLPELSPQKYFSTLQPGLEELNEAVRPLQDYGISVAKVNCVKEE-ISR 73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PQQVSTVHLQLGLPLVFIVSQQATYEADRRTAE--WVAWRLLGKAGVLLLLRDSLEVNIP
                                                                                                                                                                                                                    LLEFYAPWCGHCKALAPKYEELASLYKDIPEVTIAKID-ATANDV--PDSITGFPTIKLF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KAEGVKQP-----SIVLYKDFDEKKATYDGEIEQDALLSWVKTASTPLVGELG--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EIKTMDKI-----VVIGYIASDD------QTANDIFTTFAESQRDNYLFAATSDASIA 194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DQGVE-----GYPTLKIFRGLDAVK--PYQGARQTEAIVSYMVKQSL-PAVSPVTPENLE 147
                                                                                                                                           AAGAKDSPVEYEGSRTVEDLANFVKENG-KHKVDALEVDPKKEQESGD 488
                                                                                                                                                                             KKG--ENPVSYAGMLGTKDLLKFIQLNRISYPVNITSIQEAEEYLSGE 498
                                                                                                                                                                                                                                                      L--FYAGWQAVSMAFLQSYIDVAVKLKGTSTMLLTRINCADWSDVCTKQNVTEFPIIKMY 452
                                                                                                                                                                                                                                                                                             SKEVKAKDIGKFIQDVLDDKVEPSIKSEAIPETQEGPVTVVV---AHSYKDLVLDNEKDV
                                                                                                                                                                                                                                                                                                                                   --DMEGPDI-----DVQDDEVAETVFRD----RKRKLPLELTVELTEETFNATVMASDSIV 394
                                                                                                                                                                                                                                                                                                                                                                                                            QDANVVFKRAEEGVPVEFLVLHDVDLIISHVENNMHIE-----EIQEDEDN-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                 PETYSG-YITAGIPLAYIFA-ETKEEREQFTEEFKFIAEKHKGSINIVTI------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10174-6401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      511 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative 107; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PatentIn Release #1.0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        United
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       States of America
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4.2%; Score 172.5; DB 2; 19.9%; Pred. No. 2.7e-07;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US/08/557,122A
                                                                                                                                                                                                                                                                                                                                                                        -DAKLYGAHA-GNLNLDPSKFPAFAIQDPEKNAKYPYDQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3980.204-US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  185; Indels 131;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     298
                                                                                                                                                                                                                      441
                                                                                                                                                                                                                                                                                               384
                                                                                                                                                                                                                                                                                                                                                                        327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          242
                                                                                                                                                                                                                                                                                                                                                                                                                                                 290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    28;
```

```
Qy
                                                                     뫄
                                                                                                       Qy
                                                                                                                                          В
                                                                                                                                                                            2
                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                      Qy
                                                                                                                                                                                                                                                                                                                                                              Вþ
                                                                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                 B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; MOLECULE TYPE: protein US-09-262-666-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEFAX: 212-878-9655 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: US 0: FILING DATE: 11-DEC-1995 ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0,
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE CHARACTERISTICS:
LENGTH: 511 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TELECOMMUNICATION INFORMATION: TELEPHONE: 212-867-0123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: Hjort, Carsten Mailand TITLE OF INVENTION: Fungal Protein Disulfide NUMBER OF SEQUENCES: 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                              148
                  395 L--FYAGWQAVSMAFLQSYIDVAVKLKGTSTMLLTRINCADWSDVCTKQNVTEFPIIKMY 452
                                                                                                                                                                                                                                                                                        195
                                                                                                                                                                                                                                                                                                                            181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: ami
TOPOLOGY:
 385
                                                                                                                                              291
                                                                                                                                                                                299
                                                                                                                                                                                                                 243
                                                                                                                                                                                                                                                       241
                                                                                                                                                                                                                                                                                                                                                                                                 128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELEPHONE: 212-00.
TELEPHONE: 212-878-9655
TO TO NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FILING DATE:
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                   96 DQGVE-----GYPTLKIFRGLDAVK--PYQGARQTEAIVSYMVKQSL-PAVSPVTPENLE 147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        48 LVLAEFFAPWCGHCKALAP-KY------EQAATELKEKNIPLVKVDCTEEEALCR 95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            15 VIMCIFYMPTVNSLPELSPQKYFSTLQPGLEELNEAVRPLQDYGISVAKVNCVKEE-ISR 73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local Similarity
les 105; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME: Lambiris, Elias J.
REGISTRATION NUMBER: 33,728
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CITY: New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     74 YCGKEKDLMKAY----LFKGNILLREFPTDTLFDVNAIVAHVLFALLFSEVKYIT--NLE 127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICATION NUMBER: US/09/262,666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ADDRESSEE:
LLEFYAPWCGHCKALAPKYEELASLYKDIPEVTIAKID-ATANDV--PDSITGFPTIKLF
                                                                                                   --DMEGPDI-----DVQDDEVAETVFRD----RKRKLPLELTVELTEETFNATVMASDSIV 394
                                                                                                                                                                              QDANVVFKRAEEGVPVEFLVLHDVDLIISHVENNMHIE-----EIQEDEDN-----
                                                                                                                                                                                                                                                     PQQVSTVHLQLGLPLVFIVSQQATYEADRRTAE--WVAWRLLGKAGVLLLLRDSLEVNIP 298
                                                                                                                                                                                                                                                                                          KAEGVKQP--
                                                                                                                                                                                                                                                                                                                          ESIGSEDVEYAHLYFFHCKLVLDLTQQCRRTLMEQPLTTLNIHLFIKTMKAPLLTEVAED 240
                                                                                                                                                                                                                                                                                                                                                                                              DLQNIENALKGKANIIFSYVRAIGIPEHRAVMEAGFVYGT-----TYQFVLTTEIALL 180
                                                                                                                                                                                                                                                                                                                                                              EIKTMDKI-----VVIGYIASDD-----QTANDIFTTFAESQRDNYLFAATSDASIA 194
                                                                                                                                                                                                                 PETYSG-YITAGIPLAYIFA-ETKEEREQFTEEFKFIAEKHKGSINIVTI------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              10174-6401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 405 Lexington Avenue,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             United States of America
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4.28; llarity 19.98; Conservative 107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6346244o No. 6346244disk of xington Avenue, 64th Floor
                                                                                                                                            -----DAKLYGAHA-GNLNLDPSKFPAFAIQDPEKNAKYPYDQ
                                                                                                                                                                                                                                                                                          --SIVLYKDFDEKKATYDGEIEQDALLSWVKTASTPLVGELG--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                107;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               08/557,122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 172.5;
Pred. No. 2.7e
07; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3980.204-US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2.7e-07;
ches 185;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Isomerase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels 131;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      6346244th America,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     511;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                        242
                                                                                                                                                                                344
                                                                                                                                                                                                                   290
                                                                       384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 28;
```

Ş

453 KKG--ENPVSYAGMLGTKDLLKFIQLNRISYPVNITSIQEAEEYLSGE 498

```
δÃ
                                           밁
                                                                                                                       В
                                                                                                                                                          δÃ
                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                        Q
                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                       ρ
                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                       ş
                                                                                                                                                                                                                                                                                                                                                                                                                                              DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 8
US-08-557-122A-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 3, Application US/08557122A Patent No. 5879664 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATTORNEY/AGENT INFORMATION:
NAME: Lambiris, Elias J.
REGISTRATION NUMBER: 33,728
REFERENCE/DOCKET NUMBER: 3980
TELECOMMUNICATION INFORMATION:
TELEPHONE: 212.867-0123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0,
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE OF INVENTION:
NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CORRESPONDENCE ADDRESS
    345
                                             291
                                                                                    299
                                                                                                                         243
                                                                                                                                                                241
                                                                                                                                                                                                       195
                                                                                                                                                                                                                                          181 ESIGSEDVEYAHLYFFHCKLVLDLTQQCRRTLMEQPLTTLNIHLFIKTMKAPLLTEVAED 240
                                                                                                                                                                                                                                                                                      148
                                                                                                                                                                                                                                                                                                                             128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     442
                                                                                                                                                                                                                                                                                                                                                                    96
                                                                                                                                                                                                                                                                                                                                                                                                         74
                                                                                                                                                                                                                                                                                                                                                                                                                                                48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILING DATE: 11-DEC-1995
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STATE: New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STREET: 405 Le
CITY: New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     15 VIMCIFYMPTVNSLPELSPQKYFSTLQPGLEELNEAVRPLQDYGISVAKVNCVKEE-ISR 73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Match 4.2%; Score 172.5; DB 2
Local Similarity 19.9%; Pred. No. 2.8e-07;
es 105; Conservative 107; Mismatches 185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COUNTRY: United States ZIP: 10174-6401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ADDRESSEE:
                                                                                                                                                              PQQVSTVHLQLGLPLVFIVSQQATYEADRRTAE - - WVAWRLLGKAGVLLLLRDSLEVNIP
                                                                                                                                                                                                     KAEGVKQP-----SIVLYKDFDEKKATYDGEIEQDALLSWVKTASTPLVGELG--
                                                                                                                                                                                                                                                                                    EIKTMDKI-----VVIGYIASDD------QTANDIFTTFAESQRDNYLFAATSDASIA 194
                                                                                                                                                                                                                                                                                                                         DLQNIENALKGKANIIFSYVRAIGIPEHRAVMEAGFVYGT-----TYQFVLTTEIALL 180
                                                                                                                                                                                                                                                                                                                                                                  DQGVE-----GYPTLKIFRGLDAVK--PYQGARQTEAIVSYMVKQSL-PAVSPVTPENLE
                                                                                                                                                                                                                                                                                                                                                                                                       YCGKEKDLMKAY----LFKGNILLREFPTDTLFDVNAIVAHVLFALLFSEVKYIT--NLE 127
                                                                                                                                                                                                                                                                                                                                                                                                                                              LVLAEFFAPWCGHCKALAP-KY-------EQAATELKEKNIPLVKVDCTEEEALCR 95
--DMEGPDI-----DVQDDEVAETVFRD---RKRKLPLELTVELTEETFNATVMASDSIV 394
                                                                                  QDANVVFKRAEEGVPVEFLVLHDVDLIISHVENNMHIE-----EIQEDEDN-----
                                                                                                                         PETYSG-YITAGIPLAYIFA-ETKEEREQFTEEFKFIAEKHKGSINIVTI------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAGAKDSPVEYEGSRTVEDLANFVKENG-KHKVDALEVDPKKEQESGD 488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            E: No. 58796640 No. 5879664disk of No. 5879664th America,
405 Lexington Avenue, 64th Floor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 212-878-9655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PatentIn Release #1.0, Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Carsten Mailand
                                         ------DAKLYGAHA-GNLNLDPSKFPAFAIQDPEKNAKYPYDQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Fungal Protein Disulfide Isomerase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US/08/557,122A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    of America
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3980.204-US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            185;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels 131;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 515;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                              298
                                                                                                                         290
                                                                                                                                                                                                     242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Inc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            28;
```

```
B
                                                                                                                                                    Qy
                                                                                                                                                                                           B
Ş
                                       В
                                                                          20
                                                                                                                                                                                                                            Ωy
                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                      ; TOPOLOGY: 1:
; MOLECULE TYPE:
US-08-557-122A-34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-08-557-122A-34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                日
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       sequence 34, Application US/08557122A Patent No. 5879664 GEMERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELEFAX: 212-878-9655 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME: Lambiris, Elias J.
REGISTION NUMBER: 33.728
REFERENCE, DOCKET NUMBER: 39!
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Lambiris, Elias J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Hjort, Ca
TITLE OF INVENTION:
NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CORRESPONDENCE
                                         195
                                                                              181
                                                                                                                   148
                                                                                                                                                      128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            328 SKEVKAKDIGKFIQDVLDDKVEPSIKSEAIPETQEGPVTVVV---AHSYKDLVLDNEKDV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
                                                                                                                                                                                             96
                                                                                                                                                                                                                          74 YCGKEKDLMKAY----LEKGNILLREFPTDTLFDVNAIVAHVLFALLFSEVKYIT--NLE 127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELEPHONE: 212-878-9655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STREET: 405 Le
CITY: New York
                                                                                                                                                                                                                                                                     48 LVLAEFFAPWCGHCKALAP-KY------EQAATELKEKNIPLVKVDCTEEEALCR 95
                                                                                                                                                                                                                                                                                                        15 VIMCIFYMPTVNSLPELSPQKYFSTLQPGLEELNEAVRPLQDYGISVAKVNCVKEE-ISR 73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: US/0 FILING DATE: 11-DEC-1995
                                                                                                                                                                                                                                                                                                                                                               Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COUNTRY: United States of America ZIP: 10174-6401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ADDRESSEE:
                                     KAEGVKQP-----SIVLYKDFDEKKATYDGEIEQDALLSWVKTASTPLVGELG-- 242
                                                                                                                   EIKTMDKI-----VVIGYIASDD------QTANDIFTTFAESQRDNYLFAATSDASIA 194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KKG--ENPVSYAGMLGTKDLLKFIQLNRISYPVNITSIQEAEEYLSGE 498
PQQVSTVHLQLGLPLVFIVSQQATYEADRRTAE--WVAWRLLGKAGVLLLLRDSLEVNIP 298
                                                                            ESIGSEDVEYAHLYFFHCKLVLDLTQQCRRTLMEQPLTTLNIHLFIKTMKAPLLTEVAED 240
                                                                                                                                                  DLQNIENALKGKANIIFSYVRAIGIPEHRAVMEAGFVYGT-----TYQFVLTTEIALL 180
                                                                                                                                                                                           DQGVE-----GYPTLKIFRGLDAVK--PYQGARQTEAIVSYMVKQSL-PAVSPVTPENLE 147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAGAKDSPVEYEGSRTVEDLANFVKENG-KHKVDALEVDPKKEQESGD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LLEFYAPWCGHCKALAPKYEELASLYKDIPEVTIAKID-ATANDV---PDSITGFPTIKLF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         L--FYAGWQAVSMAFLQSYIDVAVKLKGTSTMLLTRINCADWSDVCTKQNVTEFPIIKMY 452
                                                                                                                                                                                                                                                                                                                                               105;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 515 amino acids
                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                             linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              212-867-0123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 No. 5879664o No. 5879664disk of No. 5879664th America, Inc. 5 Lexington Avenue, 64th Floor
                                                                                                                                                                                                                                                                                                                                                                                                                                         peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Carsten Mailand
                                                                                                                                                                                                                                                                                                                                                                 4.2%;
19.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Fungal Protein Disulfide Isomerase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US/08/557,122A
                                                                                                                                                                                                                                                                                                                                             107;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        34:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3980.204-US
                                                                                                                                                                                                                                                                                                                                           Score 172.5; DB 2
Pred. No. 2.8e-07;
7; Mismatches 185
                                                                                                                                                                                                                                                                                                                                                                                   DB 2;
                                                                                                                                                                                                                                                                                                                                               185;
                                                                                                                                                                                                                                                                                                                                               Indels 131;
                                                                                                                                                                                                                                                                                                                                                                                   Length 515;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                488
                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              384
                                                                                                                                                                                                                                                                                                                                                 28;
```

```
δÃ
  망
                                                                         Вþ
                                                                                                         Qy
                                                                                                                                                                                                                                 ; MOLECULE TYPE: US-09-262-666-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 10
US-09-262-666-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 3, Application US/09262666 Patent No. 6346244 GENERAL INFORMATION:
                                                                                                                                                    Query Match 4.2%; Score 172.5; DB 4; Length 515; Best Local Similarity 19.9%; Pred. No. 2.8e-07; Matches 105; Conservative 107; Mismatches 185; Indels 131
                                                                                                                                                                                                                                                                                                                                                   TELEFAX: 212-878-9655
INFORMATION FOR SEQ ID NO: 3:
                                                                                                                                                                                                                                                                                                                                                                                        PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/557
FILING DATE: 11-DEC-1995
ATTORNEY/AGENT INFORMATION:
NAME: Lambiris, Elias J.
REGISTRATION NUMBER: 33,728
REFERENCE/DOCKET NUMBER: 3980
TELECOMMUNICATION INFORMATION:
TELEPHONE: 212-867-0123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ZIP: 10174-6401
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                        SEQUENCE CHARACTERISTICS:
LENGTH: 515 amino acids
TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NUMBER OF SEQUENCES:
CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NERAL INFORMATION: APPLICANT: Hjort,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               442 AAGAKDSPVEYEGSRTVEDLANFVKENG-KHKVDALEVDPKKEQESGD 488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       243
                              74 YCGKEKDLMKAY----LFKGNILLREFPTDTLFDVNAIVAHVLFALLFSEVKYIT--NLE 127
                                                                             48
                                                                                                                 15
                                                                                                                                                                                                                                                                      TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CITY: New York
STATE: New York
96 DQGVE-----GYPTLKIFRGLDAVK--PYQGARQTEAIVSYMVKQSL-PAVSPVTPENLE 147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ADDRESSEE:
                                                                                             VIMCIFYMPTVNSLPELSPQKYFSTLQPGLEELNEAVRPLQDYGISVAKVNCVKEE-ISR 73:::: |: | : | : | : | : | : | : |
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         --DMEGPDI-----DVQDDEVAETVFRD---RKRKLPLELTVELTEETFNATVMASDSIV 394
                                                                         LVLAEFFAPWCGHCKALAP-KY------EQAATELKEKNIPLVKVDCTEEEALCR 95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KKG--ENPVSYAGMLGTKDLLKFIQLNRISYPVNITSIQEAEEYLSGE 498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SKEVKAKDIGKFIODVLDDKVEPSIKSEAIPETQEGPVTVVV---AHSYKDLVLDNEKDV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QDANVVFKRAEEGVPVEFLVLHDVDLIISHVENNMHIE-----EIQEDEDN-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |: | :: |:|| :: | :: | :: | :: | :: |
PETYSG-YITAGIPLAYIFA-ETKEEREQETEEFKFIAEKHKGSINIVTI------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         E: No. 63462440 No. 6346244disk of No. 6346244th America, 405 Lexington Avenue, 64th Floor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Hjort, Carsten Mailand
VENTION: Fungal Protein Disulfide Isomerase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  United States of America
                                                                                                                                                                                                                                                    protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -----DAKLYGAHA-GNLNLDPSKFPAFAIQDPEKNAKYPYDQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US 08/557,122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US/09/262,666
                                                                                                                                                                                                                                                                                                                                                                                                                                   3980.204-US
                                                                                                                                                    Indels 131;
                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                384
                                                                                                                                                      28;
```

FILING DATE: 11-DEC-1995 ATTORNEY/AGENT INFORMATION: NAME: Lambiris, Ellas J. REGISTRATION NUMBER: 33,728 REFERENCE/DOCKET NUMBER: 39 FELECOMMUNICATION INFORMATION: TELEPHONE: 212-867-0123 FELEPHONE: 212-87-0123 FELEPHONE: 212-87-0123 FILEFAX: 212-87-0123 FILEFAX: 212-87-0123 FILEFAX: 212-87-0123 FILEFAX: 212-878-9655 INFORMATION FOR SEQ ID NO: 34: SEQUENCE CHARACTERISTICS: LENGTH: 515 amino acids TYPE: amino acid STRANDEDNESS: single FOOLOGY: linear MOLECULE TYPE: peptide US-09-262-666-34	ited Stat 6401 BLE FORM: Floppy BM PC com STEM: PC STEM: PC ATION DAT ATION DATA: ON: ON: ON: ON: ON DATA:	RESULT 11 US-09-262-666-34 US-09-262-666-34 Sequence 34, Application US/09 Patent No. 6346244 GENERAL INFORMATION: TITLE OF INVENTION: Fungal NUMBER OF SEQUENCES: 38 CORRESPONDENCE ADDRESS: ADDRESSEE: No. 63462440 STREET: 405 Lexington AV CITY: New York CITY: New York	Qy 453 KKGENPVSYAGMLGTKDLL :: : Db 442 AAGAKDSPVEYEGSRTVEDLA	Qy 395 LFYAGWQAVSMAFLQSYID 	Qy 345DMEGPDIDVQDDEV :::	Qy 299 QDANVVFKRAEEGVPVEFLVLHDVDLIISHVENNMHIB- 	QY 241 PQQVSTVHLQLGLPLVFIVSQQATYEADRRTAE- : :: : : : :	Qy 181 ESIGSEDVEYAHLYFFHCKLV :- : : Db 195 KABGVKQPSIV	Qy 128 DLQNIENALKGKANIIFSYVRAIGIPEHRAVMEAGFVYGT- ::::::::::::::::::::::::::::::::::::
5 ,728 ,728 3980.204-US ION:	es of America disk patible patible elease #1.0, Version #1.30 a: US/09/262,666	09262666 n Mailand al Protein Disulfide Isomerase o No. 6346244disk of No. 6346244th America, Avenue, 64th Floor	**************************************	LFYAGWQAVSMAFLQSYIDVAVKLKGTSTNLLTRINCADWSDVCTKQNVTEFPIIKMY 452 	-DMEGPDIDVQDDEVAETVFRDRKRKLPLELTVELTEETFNATVMASDSIV 394 	HDVDLIISHVENNMHIE 344	PQQVSTVHLQLGLPLVFIVSQQATYEADRRTAEWVAWRLLGKAGVLLLLRDSLEVNIP 298 : :: : :: :: :: :: PETYSG-YITAGIPLAYIFA-ETKEEREQFTEEFKFIAEKHKGSINIVTI 290	SIGSEDVEYAHLYFFHCKLVLDLTQQCRRTLMEQPLTTLNIHLFIKTMKAPLLTEVAED 240 : : :	AIGIPEHRAVMEAGFVYGTTYQFVLTTEIALL 180;

```
ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 12
US-08-627-907A-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 2, Application US/08627907A Patent No. 6060302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
APPLICANT: HIRANO, Naoto
APPLICANT: HIRAI, Hisamaru
PRIOR APPLICATION DATA:
PRIOR APPLICATION NUMBER: PCT/JP
APPLICATION CATE: 22-SEP-1994
                                                                                                                                                                               COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                          COMPUTER READABLE FORM: MEDIUM TYPE: Floppy disk
                                                                                    PRIOR APPLICATION DATA:
APPLICATION NUMBER: JP 5-238402
                                                                                                                                                                                                                                                                                                                                                                                                        CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE OF INVENTION: HUMAN PHOSPHOLIPASE C-ALPHA AND TITLE OF INVENTION: SEQUENCE ENCODING THE SAME
                                                                                                                                                                                                                                                                                                                                                                                                                             NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                  STREET:
CITY: N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         128
                                                                                                                           CLASSIFICATION: 435
                                                                                                                                            FILING DATE:
                                                                                                                                                                                                                                                                                                              COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              74 YCGKEKDLMKAY----LFKGNILLREFPTDTLFDVNAIVAHVLFALLFSEVKYIT--NLE 127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   48 LVLAEFFAPWCGHCKALAP-KY-----EQAATELKEKNIPLVKVDCTEEEALCR 95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       15 VIMCIFYMPTVNSLPELSPQKYFSTLQPGLEELNEAVRPLQDYGISVAKVNCVKEE-ISR 73
                                                                                                                                                               APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                       ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAGAKDSPVEYEGSRTVEDLANFVKENG-KHKVDALEVDPKKEQESGD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KKG--ENPVSYAGMLGTKDLLKFIQLNRISYPVNITSIQEAEEYLSGE 498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           --DMEGPDI-----DVQDDEVAETVFRD---RKRKLPLELTVELTEETFNATVMASDSIV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ESIGSEDVEYAHLYFFHCKLVLDLTQQCRRTLMEQPLTTLNIHLFIKTMKAPLLTEVAED 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DLQNIENALKGKANIIFSYVRAIGIPEHRAVMEAGFVYGT-----TYQFVLTTEIALL 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DQGVE-----GYPTLKIFRGLDAVK--PYQGARQTEAIVSYMVKQSL-PAVSPVTPENLE 147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   L--FYAGWQAVSMAFLQSYIDVAVKLKGTSTMLLTRINCADWSDVCTKQNVTEFPIIKMY 452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SKEVKAKDIGKFIQDVLDDKVEPSIKSEAIPETQEGPVTVVV---AHSYKDLVLDNEKDV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               QDANVVFKRAEEGVPVEFLVLHDVDLIISHVENNMHIE-----EIQEDEDN-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PETYSG-YITAGIPLAYIFA-ETKEEREQETEEFKFIAEKHKGSINIVTI------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KAEGVKQP----SIVLYKDFDEKKATYDGEIEQDALLSWVKTASTPLVGELG--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EIKTMDKI-----VVIGYIASDD------QTANDIFTTFAESQRDNYLFAATSDASIA 194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LLEFYAPWCGHCKALAPKYEELASLYKDIPEVTIAKID-ATANDV--PDSITGFPTIKLF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PQQVSTVHLQLGLPLVFIVSQQATYEADRRTAE--WVAWRLLGKAGVLLLLRDSLEVNIP 298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            105;
                                                                                                                                                                                                                                                                                                10020
                                                                                                                                                                                                                                                                                                                                                    New York
                                                                                                                                                                                                                                                                                                                                 New York
                                                                                                                                                                                                                                                                                                                                                                    1251 Avenue of the Americas
                                                                                                                                                                                                                                                                                                                USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                         C/O FISH & NEAVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -----DAKLYGAHA-GNLNLDPSKFPAFAIQDPEKNAKYPYDQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4.2%; Score 172.5; DB 4; 19.9%; Pred. No. 2.8e-07;
                                PCT/JP94/01572
                                                                                                                                                               US/08/627,907A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          107;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                        #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            185;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels 131;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               515;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            28;
```

```
δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-08-557-122A-35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        뭥
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; MOLECULE TYPE: US-08-627-907A-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 35, Appli
Patent No. 5879664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GENERAL INFORMATION:
INFORMATION FOR SEQ
SEQUENCE CHARACTER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEPHONE: (212) 596-900
TELEFAX: (212) 596-9090
INFORMATION FOR SEQ ID NO: 2
SEQUENCE CHARACTERISTICS:
                                                                    REGISTRATION NUMBER: 33,728
REFERENCE/DOCKET NUMBER: 39
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                      CURRENT APPLICATION DATA: APPLICATION NUMBER: US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REGISTRATION NUMBER: 27,794
REFERENCE/DOCKET NUMBER: SH
TELECOMMUNICATION INFORMATION:
                                                                                                                           ATTORNEY/AGENT INFORMATION:
NAME: Lambiris, Elias J.
                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Hjort, Carsten Mailand
TITLE OF INVENTION: Fungal Protein Disulfide Isomerase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME: HALEY Jr., James F.
                                                                                                                                                                                                                                                                                                                                                                                                                                                CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                    STREET: 405 Lex
CITY: New York
STATE: New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             432 ADWSDVCTKQNVTEFPIIKMYKKGENPVSYAGMLGTKDLLKFIQLNRISYPVNITSIQEA 491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 376 VELTEETFNATYMASDS----IVLFYAGWQAVSMAFLQSYIDVAVKLKGTSTMLLTRINC 431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LENGTH: 505 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       254 ---LIQGKDLLIAYYDVDYEKDAKGSNYWRNRVMMVAKKFLDA
                                                                                                                                                                                                                                      COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
                                    TELEFAX:
                                                     TELEPHONE:
                                                                                                                                                                                 FILING DATE: 11-DEC-1995
                                                                                                                                                                                                                                                                                             MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                  COUNTRY: United States of ZIP: 10174-6401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 28
                                                                                                                                                                  CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                               ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SYFRLO-KPLLILFSD-----GTVNPQYKKAILTLVKQKYLDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TKYAASLPALLLAR--HTEGKIESIPLASTHAQ----DIVQIITDALLEMFPEITVENLP 605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  E-----FKKFISDKDASIVGFFDDSFSEAHSEFLKAASNLRD---NYRFAHTNVESLV 193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TANTINTCHKYGVSGYPTLKIFRDGEEAGAYDGPRTADGIVS--HLKKQAGPASVPLRTEE 143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LELTDDNFESRISDTGSAGLMLVEFFAPWCGHCKRLAPEYEAAATRLKG---IVPLAKVDC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NEYDDNGEGIILFRPSHLTNKFEYKTVAYTEQKMTSGKIKKFIQENIFGICPHMTEDNKD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EEYLSGELYKDLILYSSVSVLGLFSPTMKTAKEDFSEAGNYLKGYVITGIYSEEDVLLLS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     64;
   CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             amino acid
                                                                                                                                                                                                                                                                                                                                                                        New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Application US/08557122A
                                                                                                                                                                                                                                                                                                                                                                                                            405
                                      212-878-9655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                       212-867-0123
                                                                                                                                                                                                                                                                                                                                                                                                            No. 5879664o No. 5879664disk of No. 5879664th America, 5 Lexington Avenue, 64th Floor
                                                                                                                                                                                                                                                                                                                                                                                                          Lexington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             protein
                    ID NO:
                                                                                                                                                                   435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4.0%;
22.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             596-9000
                                                                                                                                                                                                        US/08/557,122A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     59; Mismatches 127;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SHGN-10
                                                                                           3980.204-US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 166.5; DB 3
Pred. No. 9.7e-07;
                                                                                                                                                                                                                                                                                                                                                       America
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           505;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         33;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         10;
```

```
Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; STRANDEDNESS:
; TOPOLOGY: lin
; MOLECULE TYPE:
US-08-557-122A-35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-262-666-35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 35, Appli
Patent No. 6346244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENERAL INFORMATION:
                                      INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          tent No.
                                                                        REFERENCE/DOCKET NUMBER: 39
TELECOMMUNICATION INFORMATION:
TELEPHONE: 212-867-0123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE OF INVENTION: Fungal Protein Disulfide Isomerase NUMBER OF SEQUENCES: 38
                                                                                                                      APPLICATION NUMBER: US 08/557,122
AFILING DATE: 11-DEC-1995
ATTORNEY/REENT INFORMATION:
NAME: Lambiris, Elias J.
REGISTRATION NUMBER: 33,728
REGISTRATION NUMBER: 33,728
                                                                                                                                                                                                                                                                                                                                                                  COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                             SOFTWARE: PatentIn Release #1.0, Version #1.30 CURRENT APPLICATION DATA:
                    SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                       PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     276 LFTELAKKN----RGLM 288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           474 IQLNRISYPVNITSIQEAEEYLSGELYKDLILYSSVSVLGLFSPTMKTAKEDFSEAGNYL 533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 416 VKLKGTSTMLLTRINCADWSDVCTKQNVTEFPIIKMYKKGE--NPVSYAGMLGTKDLLKF 473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        358 VAETVERDRKRKLPLE-LTVELTEETENATVMASDSIVL-FYAGWQAVSMAFLQSYIDVA 415
                                                                                                                                                                                                                                                                                                                              COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                             CITY: New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   76
                                                                    TELEPHONE:
                                                                                                                                                                                                                                                             FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                           COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       16 LASSVFAQQEAVAPEDSAVVKLATDSFNEYIQSHDLVLAEFFAPWCGHCKNMAPEYVKAA 75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LENGTH:
                                                                                                                                                                                                                                          CLASSIFICATION:
                                                                                                                                                                                                                                                                            APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CWLNL--KNTPVGRGIL 660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           --DVFEKWLQVEALPYFGEI------DGSVFAQYVESGLPLGYLFYNDEEELEEYKP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LLEMFPE-ITVENLPSYFRLQKPLLILFSDGTVNPQYKKAILTL-----VKQKYLDSFTP 645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NDYDFVSAENADDDFKLSIYLPSAMDEPVVYNGKKAD-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KGYVITGIYSEEDVLLLSTKYAASL--PALLLARHTEGKIESIPLASTHAQDIVQIITDA 591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        --MIKQSQPA-VAVVADLPAYLANETFVTPVIVQSGKIDADFNATF-----YSMANKHF 185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ETLV-EKNITLAQIDCTENQDLCMEHNIPGFPSLKIFKNRDVNNSIDYEGPRTAEAIVQF 134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                66;
                                                                                                                                                                                                                                                                                                                                                                                                          10174-6401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                            New Yorl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Application US/09262666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 530
                                                                                                                                                                                                                                                                                                                                                                                                                         United States of America
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            405 Lexington
530 amino acids
                                                       212-878-9655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ŏ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6346244o No. 6346244disk of No. xington Avenue, 64th Floor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3.7%;
                                                                                                                                                                                                                                                                            US/09/262,666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              67;
                                                                                                            3980.204-US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 152.5;
Pred. No. 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches 126;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .1e-05
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6346244th America,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                530;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              58;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                15;
```

```
В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; TOPOLOGY: linear; MOLECULE TYPE: peptide US-09-262-666-35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-08-557-122A-32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 32, Applicat: Patent No. 5879664 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local (
                                                                                       TELEFAX: 212-878-9655 INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS
                                                                                                                                            CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/557
FILING DATE: 11-DEC-1995
CLASSIFICATION: 435
ATTOREY/AGENT INFORMATION:
NAME: Lambiris, Elias J.
REGISTRATION NUMBER: 33,728
REGISTRATION NUMBER: 3807
TELECOMMUNICATION INFORMATION:
TELEDHONE: 212-867-0123
                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE OF INVENTION: FOUNDER OF SEQUENCES:
CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                       STREET: "--
STREET: "--
New York
New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             592 LLEMFPE-ITVENLPSYFRLQKPLLILFSDGTVNPQYKKAILTL-----VKQKYLDSFTP 645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                186 NDYDFVSAENADDDFKLSTYLPSAMDEPVVYNGKKAD---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    135 --MIKQSQPA-VAVVADLPAYLANETFVTPVIVQSGKIDADFNATF-----YSMANKHF 185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         474 IQLNRISYPVNITSIQEAEEYLSGELYKDLILYSSVSVLGLFSPTMKTAKEDFSEAGNYL 533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               416 VKLKGTSTMLLIRINCADWSDVCTKQNVTEFPIIKMYKKGE--NPVSYAGMLGTKDLLKF 473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   358 VAETVFRDRKRKLPLE-LTVELTEETFNATVMASDSIVL-FYAGWQAVSMAFLQSYIDVA 415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  276 LFTELAKKN----RGLM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      646 CWLNL--KNTPVGRGIL 660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                534 KGYVITGIYSEEDVLLLSTKYAASL--PALLLARHTEGKIESIPLASTHAQDIVQIITDA 591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        227 --DVFEKWLQVEALPYFGEI------DGSVFAQYVESGLPLGYLFYNDEEELEEYKP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: amino acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                             COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                         STATE: New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                16 LASSVFAQQEAVAPEDSAVVKLATDSFNEYIQSHDLVLAEFFAPWCGHCKNMAPEYVKAA 75
                                   STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                      COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          76 ETLY-EKNITLAQIDCTENQDLCMEHNIPGFPSLKIFKNRDVNNSIDYEGPRTAEAIVQF 134
                                                                                                                                                                                                                                                                                                                                SOFTWARE:
                    TOPOLOGY:
                                                                       LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        66;
                                                                                                                                                                                                                                                                                                                                                                                                                         rRY: United States
10174-6401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                   amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Application US/08557122A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           405 Lexington Avenue,
                                                                      521 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Hjort, Carsten Mailand
                                                                                                                                                                                                                                                                                                                              PatentIn Release #1.0, Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               No. 58796640 No. 5879664d1sk of No. 5879664th America, 5 Lexington Avenue, 64th Floor
                    linear
                                                                                                                                                                                                                                                                                                                                                                                 Floppy disk
peptide
                                  single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Fungal Protein Disulfide Isomerase 38
                                                                                                                                                                                                                                                                                            US/08/557,122A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  288
                                                                                                                                                                                                                                                                                                                                                                                                                                          of America
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        67;
                                                                                                                                                                                   3980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 152.5; DB (
Pred. No. 2.1e-05)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                   204 -US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          126;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              530;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        58;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ---IADA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Inc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        15;
```

US-08-557-122A-32

```
DЬ
                                                                                                                                                                                                                                                                                   рь
                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                         Ş
                                                                                                                                            밁
                                                                                                                                                                          γ
                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                      QY
                                                                                                                                                                                                                                                                                                                                                                                             QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                  В
Search completed: March 13, 2003, 17:15:00 Job time : 23 {\tt secs}
                                                                          DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 3.6%; Score 150; DB 2; Length 521; Best Local Similarity 21.1%; Pred. No. 3.5e-05; Matches 67; Conservative 66; Mismatches 125; Indels 59; Gaps
                                                                                          646 CWLNL--KNTPVGRGIL 660 : | | | | | | | | |
                                                                                                                                                                                                               134 --MIKQSQPA-VAVVADLPAYLANETEVTPVIVQSGKIDADENATE-----YSMANKHE 184
                                                                                                                                                                                                                                                                                                             474 IQLNRISYPVNITSIQEAEEYLSGELYKDLILYSSVSVLGLFSPTMKTAKEDFSEAGNYL 533
                                                                                                                                                                                                                                                                                                                                                          358 VAETVFRDRKRKLPLE-LTVELTEETFNATVMASDSIVL-FYAGWQAVSMAFLQSYIDVA 415
                                                                        275 LETELAKKN----RGLM 287
                                                                                                                                                                 592 LLEMFPE-ITVENLPSYFRLQKPLLILFSDGTVNPQYKKAILTL-----VKQKYLDSFTP 645
::| : | | | | | : : | | : | : |
                                                                                                                                            226 -- DVFEKWLQVEALPYFGEI------DGSVFAQYVESGLPLGYLFYNDEEELEEYKP 274
                                                                                                                                                                                                                                                                                                                                                                                                                                  16 LASSVFAQQEAVAPEDSAVVKLATDSFNEYIQSHDLVLAEFFAPWCGHCKNMAPEYVKAA 75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        16;
```

```
Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Post-processing: Minimum Match 0%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Maximum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Minimum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        score greater than or equal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB
                                                                                                                                                                                                                                                             169.5
169.5
132
132
129
129
128
128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Published_Applications_AA:*

1: /cgn2_6/ptodata/1/pubpaa/Pi
2: /cgn2_6/ptodata/1/pubpaa/Pi
3: /cgn2_6/ptodata/1/pubpaa/Pi
3: /cgn2_6/ptodata/1/pubpaa/Ui
4: /cgn2_6/ptodata/1/pubpaa/Ui
6: /cgn2_6/ptodata/1/pubpaa/Ui
6: /cgn2_6/ptodata/1/pubpaa/Ui
6: /cgn2_6/ptodata/1/pubpaa/Ui
9: /cgn2_6/ptodata/1/pubpaa/Ui
10: /cgn2_6/ptodata/1/pubpaa/Ui
11: /cgn2_6/ptodata/1/pubpaa/Ui
11: /cgn2_6/ptodata/1/pubpaa/Ui
11: /cgn2_6/ptodata/1/pubpaa/Ui
11: /cgn2_6/ptodata/1/pubpaa/Ui
12: /cgn2_6/ptodata/1/pubpaa/Ui
13: /cgn2_6/ptodata/1/pubpaa/Ui
14: /cgn2_6/ptodata/1/pubpaa/Ui
15: /cgn2_6/ptodata/1/pubpaa/Ui
16: /cgn2_6/ptodata/1/pubpaa/Ui
17: /cgn2_6/ptodata/1/pubpaa/Ui
18: /cgn2_6/ptodata/1/pubpaa/Ui
19: /cgn2_6/ptodata/1/pubpaa/Ui
10: /cgn2_6/ptodata/1/pubpaa/Ui
10: /cgn2_6/ptodata/1/pubpaa/Ui
11: /cgn2_6/ptodata/1/pubpaa/Ui
12: /cgn2_6/ptodata/1/pubpaa/Ui
13: /cgn2_6/ptodata/1/pubpaa/Ui
14: /cgn2_6/ptodata/1/pubpaa/Ui
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  is the number of results predicted by chance to have a mater than or equal to the score of the result being printed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query
Match
              100.0
4.3
4.1
3.2
3.1
3.1
3.1
3.1
3.1
3.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-847-046-2
4142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         199416 seqs, 46092074 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BLOSUM62
Gapop 10.0 ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               March 13, 2003, 17:13:27; Search time 16 Seconds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                . /cgn2_6/ptodata/1/pubpaa/US08_NEW_PUB.pep:*
. /cgn2_6/ptodata/1/pubpaa/US06_NEW_PUB.pep:*
. /cgn2_6/ptodata/1/pubpaa/US06_NEW_PUB.pep:*
. /cgn2_6/ptodata/1/pubpaa/US06_PUBCOMB.pep:*
. /cgn2_6/ptodata/1/pubpaa/US07_NEW_PUB.pep:*
. /cgn2_6/ptodata/1/pubpaa/US07_PUBCOMB.pep:*
. /cgn2_6/ptodata/1/pubpaa/US07_PUBCOMB.pep:*
. /cgn2_6/ptodata/1/pubpaa/US08_PUBCOMB.pep:*
. /cgn2_6/ptodata/1/pubpaa/US09_PUBCOMB.pep:*
. /cgn2_6/ptodata/1/pubpaa/US09_PUBCOMB.pep:*
. /cgn2_6/ptodata/1/pubpaa/US09_PUBCOMB.pep:*
. /cgn2_6/ptodata/1/pubpaa/US10_PUBCOMB.pep:*
2: /cgn2_6/ptodata/1/pubpaa/US10_PUBCOMB.pep:*
3: /cgn2_6/ptodata/1/pubpaa/US10_PUBCOMB.pep:*
2: /cgn2_6/ptodata/1/pubpaa/US60_NEW_PUB.pep:*
3: /cgn2_6/ptodata/1/pubpaa/US60_PUBCOMB.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MFSGFNVFRVGISFVIMCIF.....FKEAEKSFRRDKELGCSKVN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Copyright
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length
           GenCore version 5.1.4_p5_4578 (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gapext 0.5
              10 US-09-847-046-2

9 US-10-108-605-51

10 US-09-759-010-8

10 US-09-725-301-869

10 US-09-925-300-1661

10 US-09-925-300-1661

10 US-09-938-973-436

10 US-09-978-973-436

10 US-09-978-973-90

10 US-09-978-192A-90

10 US-09-978-193-90

10 US-09-978-193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ΙD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (without alignments)
2324.769 Million cell updates/sec
Sequence 2, Appli
Sequence 51, Appli
Sequence 869, Appli
Sequence 1661, Appli
Sequence 15, Appl
Sequence 436, Appl
Sequence 436, Appl
Sequence 90, Appl
Sequence 90, Appl
Sequence 90, Appl
Sequence 90, Appl
Sequence 74, Appl
                                                                                                                Вþ
                                                                                                                                                                 Qy
                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 1
US-09-847-046-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQ ID NO 2
LENGTH: 807
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                           Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 2, Application US/09847046 Patent No. US20020068036A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                         121
                                                                                                                61
                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                                                     Local
```

45	44	43	42	41	40	39	38	37	36	35	34	ω ω	32	31	30	29	28	27	26	25	24	23	22	21	20
128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128
3.1	3. ₁	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3. ₁	3.1	3.1	3.1		3.1		3.1								3.1	
432	432	432	432	432	432	432	432	432	432	432	432	432	432	432	432	432	432	432	432	432	432	432	432	432	432
9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
-705	US-10-173-697-74	-10-173-695	-184-658-7	-176-993	-176-992-7	-176-991	-10-176-987	6-985	-10-176-750	-10-176-747-7	-10-176-492-7	-176-488	-10-175-743-7	75-740-7	-739-7	-174-588-7	-7	-174-579	-10-174-572	-700-7	-180-557	-7	-913	-176-7	82
•	74,	74,	e 74,	74,	`	74,	Sequence 74, Appl	74,	74,	74,	74,		e 74,	74,	e 74,	•	74,	74,	e 74,	74,	e 74,	74,	74,	`	Sequence 74, Appl

ALIGNMENTS

ΑN

```
; ORGANISM: Homo sapiens US-09-847-046-2
                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Hevezi, Peter
APPLICANT: Mack, David
APPLICANT: Gish, Kurt C.
APPLICANT: Gish, Kurt C.
APPLICANT: Wilson, Keith E.
TITLE OF INVENTION: COMPOSITIONS, AND METHODS OF PROSTATE AND/OR BREAST CANCER,
TITLE OF INVENTION: MODULATORS
TILE OF INVENTION: MODULATORS
TILE REFERENCE: A-69199-1/DJB/JJD/AMS
CURRENT APPLICATION NUMBER: US/09/847,046
CURRENT FILING DATE: 2001-04-30
PRIOR APPLICATION NUMBER: US 09/733,288
PRIOR APPLICATION NUMBER: US 09/735.
                                                                                                                                                                                                                                                                                                                                          SOFTWARE: PatentIn version 3.1
                                                                                                                                                                                                                                                                                                                                                           NUMBER OF SEQ ID NOS:
   121
                                                                                                                           VAKVNCVKEEISRYCGKEKDLMKAYLFKGNILLREFPTDTLFDVNAIVAHVLFALLFSEV
al Similarity
807; Conserv
                                                                                                                                                                                            100.0%; ilarity 100.0%; Conservative 0;
                                                                                                                                                                                              0;
                                                                                                                                                                                            Score 4142;
Pred. No. 0;
Mismatches
                                                                                                                                                                                                                               DB
                                                                                                                                                                                              0;
                                                                                                                                                                                                                             Length 807;
                                                                                                                                                                                              0,
                                                                                                                                                                                            Gaps
                                                                                                                              60
                                                                                                                                                           60
                                                                                                                                                                                            0;
```

```
US-10-108-605-51
                                                                                                                                                                                                                                                                                             US-10-108-605-51
                                                                                                                                                                                                                                                                                                                                                                                                            Q
                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                   GENERAL INFORMATION:
APPLICANT: Broadus, Julie
APPLICANT: Stam, Lynn
                                                                                                                                                                                                                                                                      Sequence 51, Application US/10108605 Patent No. US20020160934A1
  Query Match
                                                                       SEQ ID NO 51
                                                                               PRIOR APPLICATION NUMBER: US 09/761,142
PRIOR FILING DATE: 2001-01-16
PRIOR APPLICATION NUMBER: US 60/176,418
PRIOR FILING DATE: 2000-01-14
NUMBER OF SEQ ID NOS: 361
SOFTWARE: Patentin Ver. 2.1
                                                                                                                                                    TITLE OF INVENTION: NUCLEIC ACID SEQUENCES F
TITLE OF INVENTION: PROTEINS ESSENTIAL FOR
FILE REFERENCE: 31133B
CURRENT APPLICATION NUMBER: US/10/108,605
CURRENT FILING DATE: 2002-03-27
                                                                                                                                                                                                              APPLICANT:
                                   ORGANISM: Drosophila
                                                TYPE: PRT
                                                          LENGTH: 496
                                                                                                                                                                                                                                                                                                                                             781
                                                                                                                                                                                                                                                                                                                                                                  781
                                                                                                                                                                                                                                                                                                                                                                                          721
                                                                                                                                                                                                                                                                                                                                                                                                               721
                                                                                                                                                                                                                                                                                                                                                                                                                                       661
                                                                                                                                                                                                                                                                                                                                                                                                                                                             661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                          HWNRSNWFKEAEKSFRRDKELGCSKVN
                                                                                                                                                                                                                                                                                                                                                                                                     WKPPLPAYDFLSMIDAATSQRGTRKVPKCMKETDVQENDKEQHEDKSAVRKEPIETLRIK 780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            YPVNITSIQEAEEYLSGELYKDLILYSSVSVLGLFSPTMKTAKEDFSEAGNYLKGYVITG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TSTMLLTRINCADWSDVCTKQNVTEFPIIKMYKKGENPVSYAGMLGTKDLLKFIQLNRIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TVFRDRKRKLPLELTVELTEETFNATVMASDSIVLFYAGWQAVSMAFLQSYIDVAVKLKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ESIGSEDVEYAHLYFFHCKLVLDLTQQCRRTLMEQPLTTLNIHLFIKTMKAPLLTEVAED
                                                                                                                                                                                                                                                                                                                                                                                                                                                  RAYFDPLPPLPLLVLVNLHSGGQVFAFPSDQAIIEENLVLWLKKLEAGLENHITILPAQE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VENLPSYFRLQKPLLILFSDGTVNPQYKKAILTLVKQKYLDSFTPCWLNLKNTPVGRGIL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            IYSEEDVLLLSTKYAASLPALLLARHTEGKIESIPLASTHAQDIVQIITDALLEMFPEIT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TVFRDRKRKLPLELTVELTEETFNATVMASDSIVLFYAGWQAVSMAFLQSYIDVAVKLKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ANVVFKRAEEGVPVEFLVLHDVDLIISHVENNMHIEEIQEDEDNDMEGPDIDVQDDEVAE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ANVVFKRAEEGVPVEFLVLHDVDLIISHVENNMHIEEIQEDEDNDMEGPDIDVQDDEVAE
                                                                                                                                                                                                                                                                                                                                                                                         WKPPLPAYDFLSMIDAATSQRGTRKVPKCMKETDVQENDKEQHEDKSAVRKEPIETLRIK
                                                                                                                                                                                                                                                                                                                                                                                                                                       RAYFDPLPPLPLLVLVNLHSGGQVFAFPSDQAIIEENLVLWLKKLEAGLENHITILPAQE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VENLPSYFRLQKPLLILFSDGTVNPQYKKAILTLVKQKYLDSFTPCWLNLKNTPVGRGIL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                IYSEEDVLLLSTKYAASLPALLLARHTEGKIESIPLASTHAQDIVQIITDALLEMFPEIT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TSTMLLTRINCADWSDVCTKONVTEFPIIKMYKKGENPVSYAGMLGTKDLLKFIQLNRIS
                                                                                                                                                                                                              Bachmann, Jane
Kamdar, Kim
                                    melanogaster
   38
   Score
                                                                                                                                                                                                                                                                                                                                                                   807
                                                                                                                                                                                                                                                                                                                                            807
   177;
                                                                                                                                                                                       FROM DROSOPHILA MELANOGASTER THAT ENCODE R LARVAL VIABILITY AND USES THEREOF
   DB
   9;
Length
   496;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 480
                                                                                                                                                                                                                                                                                                                                                                                                                                       720
                                                                                                                                                                                                                                                                                                                                                                                                                                                             720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      240
                                                         Š
                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
             QΥ
                                    밁
                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                  US-09-759-010-8
                                                                                                                                                                                                                                                                                                                                                                             RESULT 3
                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                   QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                               Ouery Match
Best Local Similarity
Matches 111; Conserv
              126
                                                                                                                                                                                                                                                                                                                                                                                                                446
                                                                                                                                                                                                                                                                                                                                                                                                                                                              386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              659
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       544
                                     88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            80
                                                           75
                                                                                  44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         20
                                                                                                                                                                                                                                                                                                                                                                                                                                      FKEAEK - - - SFRRDKEL
                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
```

```
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NITSIQEAEEYLSGELYKDLILYSSVSVLGLFSPTMKTAKEDFSEAGNYLKGYVITGIYS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ELTVELTEETFNATV-----MASDSIVL--FYAGWQAVSMAFLQSYIDVAVKL-KGTST 423
                                                                                                                                                                                                                                                                                                                              MLLTRINCADWSDVCTKQNVTEFPIIKMYKKGENPVSYAGMLGTKDLLKFIQLNRISYPV 483
FRKEDNKVIDFNLDRTL 462
                                                                               KSVLVEFYAPWCGHCKQLAPIYDQLAEKYKDNEDIVIAKMDSTANELESIKISSFPTIKY
                                                                                                                      TSQRGTRKVP---KCMKETDVQENDKEQHEDKSAV-----RKEPIETLRIKHWNRSNW
                                                                                                                                                             YKPESDDLSAETIEAFLKKFLDGKLKQHLLSQELP-EDWDKNPVKVLVSSNFESVALDKS
                                                                                                                                                                                                      --PSDQAIIEENLVLWLKK-LEAGLENHITI--LPAQEW-KPP---LPAYDFLSM-IDAA
                                                                                                                                                                                                                                               HIEKYVDPLKEIAKKYRDDILFVTISSDEEDHTRIFEFFGMNKEEVPTIRLIKLEEDMAK
                                                                                                                                                                                                                                                                                     ILRAYFDPLPPL-----LVLVNLHSGGQ----VFAF------
                                                                                                                                                                                                                                                                                                                                                                 LPSYFRLQK-PLLILESDGTVNPQY----KKAILTLVKQXYLDSFTPCWLNLKNTPVGRG
                                                                                                                                                                                                                                                                                                                                                                                                                NADVI - - - AKYEAKDNGVVLFKPFDDK - - -
                                                                                                                                                                                                                                                                                                                                                                                                                                                     EEDVLLLSTKYAASLPALLLARHTEGKIESIPLASTHAQDIVQIITDALLEMFPEITVEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DLTSVADAEQFL-----KD----NEIAIIGFFKDLESEEAKTFTKVANALDSFVF-GVSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EAEVKVEEGVLVATVDNFKQLIADNEFVLVEFYAPWCGHCKALAPEYAKAAQQLAEKESP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    19.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               96;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pred. No. 1.6e
6; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   No. 1.6e-06;
smatches 180;
                                                                                                                                                                                                                                                                                                                                                                                                                --KSVFE--GELNEEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                         658
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      543
                                                                                   445
                                                                                                                                                                                                                                                 326
                                                                                                                                                                                                                                                                                       687
                                                                                                                                                                                                                                                                                                                                                                                                                                                         603
                                                                                                                                                                                                          737
                                                                                                                                                                                                                                                                                                                                266
                                                                                                                                                                                                                                                                                                                                                                                                                224
                                                                                                                        787
                                                                                                                                                                 385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     25;
```

```
Sequence 8, Application US/09759010

Patent No. US20010034042A1

GENERAL INFORMATION:

APPLICANT: Srivastava, Pramod K.

TITLE OF INVENTION: COMPLEXES OF PEPTIDE BINDING FRAGMENTS OF HEAT-SHOCK

TITLE OF INVENTION: PROTEINS AND THEIR USE AS IMMUNOTHERAPEUTIC AGENTS

FILE REFERENCE: 8449-135

CURRENT APPLICATION NUMBER: US/09/759,010

CURRENT FILING DATE: 2001-01-12

NUMBER OF SEQ ID NOS: 11

SOFTWARE: Patentin Ver. 2.1

SEQ ID NO 8

LENGTH: 515

TYPE: PRT

ORGANISM: Homo sapiens

US-09-759-010-8
                                                                                                                                                                  15 VIMCIFYMPTVNSLPELSPQKYFSTLQPGLEELNEAVRPLQDYGISVAKVNCVKEEISRY 74 :: |: | : | : | | |
LVLAEFFAPWCGHCKALAP-KY----
                                                            ----DLCRSQGVEGYPTLKIFRGVDSSKPYQGARQTESIVSYMIKQSLPAVSSVNE-EN
                                                                                       CGKEKDLMKAYLFKGNILLREF-----
                                                                                                                                                                                                                                             4.1%;
20.6%;
                                                                                                                                                                                                                          89;
                                                                                                                                                                                                                      Score 169.5; DB
Pred. No. 7e-06;
9; Mismatches 19
                                                                                                 PTDTLFDVNAIVAHVLFALL--FSEVKYITN 125
                                                                                                                                           -EEAATELKAKNIPLVKVDCTAEE----
                                                                                                                                                                                                                            193;
                                                                                                                                                                                                                                                                  10;
                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                              Length
                                                                                                                                                                                                                        145;
                                                                                                                                                                                                                                                                  515;
                                                                                                                                                                                                                          Gaps
                         185
                                                                                                                                             87
                                                                141
                                                                                                                                                                                                                            27;
```

```
Ş
                                  망
                                                                δõ
                                                                                                    멍
                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 4
US-09-925-301-869
                                                                                                                                                                          멍
                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                  NAME/KEY: SITE
LOCATION: (9)
OTHER INFORMATION:
US-09-925-301-869
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQ ID NO 869
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 869, Application US/09925301 Patent No. US20020052308A1
                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CURRENT APPLICATION NUMBER: US/09/925,301
CURRENT FILING DATE: 2001-08-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Rosen et al.
TITLE OF INVENTION: Nucleic Acids, Proteins and Antibodies
FILE REFERENCE: PA106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOFTWARE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRIOR APPLICATION NUMBER: 60/124,270 PRIOR FILING DATE: 1999-03-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR APPLICATION NUMBER: PCT/US00/05882
PRIOR FILING DATE: 2000-03-08
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NUMBER OF SEQ ID NOS: 1694
                                                                                                                                                                                                                                                                                                                                                                                      OTHER INFORMATION: Xaa equals any
                                                                                                                                                                                                                                                                                                                                                                                                        NAME/KEY: SITE LOCATION: (7)
                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LENGTH: 544
TYPE: PRT
 552
                                    183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         433
                                                                     492
                                                                                                                                                                                                      376 VELTEETFNATVMASDS----IVLFYAGWQAVSMAFLQSYIDVAVKLKGTSTMLLTRINC 431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                196
                                                                                                                                                                          67
                                                                                                                                                                                                                                                                Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGFPTLRLYPAGAKDSPIEYSGSRTVEDLANFVKENG-KHNVDALNVASEETQEGGDV
TKYAASLPALLLAR--HTEGKIESIPLASTHAQ----DIVQIITDALLEMFPEITVENLP 605
                                                                                                                                     ADWSDVCTKQNVTEFPIIKMYKKGENPVSYAGMLGTKDLLKFIQLNRISYPVNITSIQEA 491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TEFPIIKMYKKG--ENPVSYAGMLGTKDLLKFIQLNRISYPVNITSIQEAEEYLSGEL 499
                                 E----FKKFISDKDASIVGFFDDSFSEAHSEFLKAASNLRD---NYRFAHTNVESLV
                                                                   EEYLSGELYKDLILYSSVSVLGLFSPTMKTAKEDFSEAGNYLKGYVITGIYSEEDVLLLS 551
                                                                                                    TANTITCNKYGVSGYPTLKIFRDGEEAGAYDGPRTADGIVS--HLKKQAGPASVPLRTEE 182
                                                                                                                                                                        LELTDDNFESRISDTGSAGLMLVEFFAPWCGHCKRLAPEYEAAATRLKG--IVPLAKVDC 124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APWCGHCKALAPKYDELAALY-------ADHPDLAAKVTIAKIDATANDVPDPI 432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGWQAVSMAFLQSYIDVAVKLKGTSTMLLTRINCADWSDVCTK------QNV 443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ESQ----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EDEDNDMEGPDIDVQDDEVAETVFRDRKRKLPLELTVELTEETFNATVMASDSIVL--FY 397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LNLDSQKFPAFAIQDPAKNAKYPYDQAKELNADEVEKFI---QDVLDGKVEPSIKSEPVP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LLLLRDSLEVNIPQD----ANVVFKRAEE--GVPVEFLVLHDVDLIISHVENNMHIEEIQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ETYSG-YIGAGVPLAYIFA-ETKEEREKYTEDFKPIAQKHKGAINIATIDAKMFGAHAGN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QQVSTVHLQLGLPLVFIVSQQATYEADRRTAEW------VAWRLLG-KAGV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LEEIKTMDKI------VVIGYIPSDDQETYQAFEKYAESQRDNYLFAATDDAAIAKSEGV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EDVEYAHLY -- FFHCKLVLD--LTQQCRRTLMEQPLTTLNIHLFIKTMKAPLLTEVAEDP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EQPSIV-LYKDFDEKKAVYDGEIEQEA-----IHSWVKSASTPLVGEIG--P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PatentIn Ver.
                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                               Xaa equals any of the naturally occurring
                                                                                                                                                                                                                                                             4.18; 22.68;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2001-08-1
                                                                                                                                                                                                                                                59;
                                                                                                                                                                                                                                                           Score 169.5; DB Pred. No. 7.6e-06
                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                      of the naturally occurring
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -VTV-VVAHSYKDLVIDNDKDVLLEFY 385
                                                                                                                                                                                                                                                                               DB 10;
                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                               Length
                                                                                                                                                                                                                                            33;
                                                                                                                                                                                                                                                                                                                                  L-amino
                                                                                                                                                                                                                                                                                                                                                                                      L-amino
                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               241
                                                                                                                                                                                                                                                                                                                                    acids
                                                                                                                                                                                                                                                                                                                                                                                       acids
                                                                                                                                                                                                                                              10;
```

```
δõ
                                    B
                                                                     δÃ
                                                                                                         망
                                                                                                                                          Q
                                                                                                                                                                                  рь
                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                  Вb
                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                           Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                          Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Db
                                                                                                                                                                                                                                                           멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ; OTHER INFORMATION: Xaa equals any of the naturally occurring L-amino acids US-09-925-300-1661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-925-300-1661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOFTWARE: PatentIn Ver. 2.0
SEQ ID NO 1661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 1661, Application Patent No. US20020151681A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CURRENT APPLICATION NUMBER: US/09/925,300 CURRENT FILING DATE: 2001-08-10 PRIOR APPLICATION NUMBER: PCT/US00/05988 PRIOR FILING DATE: 2000-03-08 PRIOR APPLICATION NUMBER: 60/124,270 PRIOR FILING DATE: 1999-03-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Craig Rosen, APPLICANT: Steve Ruber
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE OF INVENTION: Nucleic Acids, Proteins FILE REFERENCE: PA101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NUMBER OF SEQ ID NOS: 1890
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME/KEY: SITE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM: Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ENGTH: 468
 462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           233
                                      382
                                                                          405
                                                                                                           325
                                                                                                                                              362
                                                                                                                                                                                    271
                                                                                                                                                                                                                       302
                                                                                                                                                                                                                                                           230
                                                                                                                                                                                                                                                                                            242 QQVSTVHLQLGLPLVFIVSQQATYEADRRTAEWVAWRLLGKAGVLLLLRDSLEVNIPQDA 301
                                                                                                                                                                                                                                                                                                                                    176
                                                                                                                                                                                                                                                                                                                                                                       186
                                                                                                                                                                                                                                                                                                                                                                                                           116
                                                                                                                                                                                                                                                                                                                                                                                                                                                129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                293 ---LIQGKDLLIAYYDVDYEKNAKGSNYWRNRVMMVAKKFLDA 332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local Similarity hes 112; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              15 VIMCIFYMPTVNSLPELSPQKYFSTLQPGLEELNEAVRPLQDYGISVAKVNCVKEEISRY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           19 IILVEFYAPWCGHCKKLAPE-----YEKAAKELSKRSPP-----IPLAKVDAT-----
                                                                                                                                                                                  -YTFAIADE----EDYAGEVKDLGLSESGEDVNAAILDESGKKFAMEPE-EFDSDTLREF
AGMLGTKD---LLKFIQ 475
                                    KQLEPVYNSLAKKYKGQKGLVIAKMD-ATANDVPSDRYKVEGFPTIYFAPSGDKKNPVKF
                                                                       MAFLQSYIDVAVKLKGTSTMLLTRINCADWSDV-CTKQNVTEFPIIKMYKKGE--NPVSY 461
                                                                                                           VTAFKKGKLKPVIKSQPVPKNNKGPVKVVV---GKTFDSIVMDPKKDVLIEFYAPWCGHC
                                                                                                                                              VFRDRKRKL-----
                                                                                                                                                                                                                     NVVFKRAEEGVPVEFLVLHDVDLIISHVENNMHIEEIQEDEDNDMEGPDIDVQDDEVAET
                                                                                                                                                                                                                                                           KRYTR-----RPLV-VVYYSVDFSFDYRAATQF-WR----SKVLEVAKDFPE-----
                                                                                                                                                                                                                                                                                                                                  GQLVVMQPEKFQSK-----YEPRSHMMDVQGSTQDSAIKDFVLKYALPLVGHRKVSNDA
                                                                                                                                                                                                                                                                                                                                                                     EDVEYAHLYFFHCKLVLDLTQQCRRTLMEQPLTTLN--IHLFIKTMKAPLL--TEVAEDP 241
                                                                                                                                                                                                                                                                                                                                                                                                                                            LQNIENALK-GKANIIFSYVRAIGIPEHRAVMEAGFVYGTTYQF--VLTTEIALLESIGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  --AETDLAKREDVSGYPTLKIFRKGRPYDYNGPREKYGIVDYMIEQSGPPSKEILT----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CGKEKDLMKAYLFKGNILLREFPTDTLFDVN-----AIVAHVLFALLFSEVKYITNLED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NEYDDNGEGIILFRPSHLTNKFEDKTVAYTEQKMTSGKIKKFIQENIFGICPHMTEDNKD
                                                                                                                                                                                                                                                                                                                                                                                                         LKQVQEFLKDGDDVIIIGVFKGESDPAYQQYQDAANNLREDYKFHHTFSTEIAKFLKVSQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SYFRLQ-KPLLILFSD-----GTVNPQYKKAILTLVKQKYLDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (2)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Steve Ruben
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      us/09925300
                                                                                                                                              ----PLELTVELTEETFNATVM--ASDSIVLFYAGWQAVS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 132; DB 10
Pred. No. 0.0079;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    211;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Antibodies
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                      440
                                                                                                                                                                                  324
                                                                                                                                                                                                                                                                                                                                                                                                                                              185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           292
                                                                                                           381
                                                                                                                                              404
                                                                                                                                                                                                                                                           270
                                                                                                                                                                                                                                                                                                                                  229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                       361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    25;
```

밁

441

EG--GDRDLEHLSKFIE

```
δÃ
                                    В
                                                                                                                                          Q
                                                                    Ş
                                                                                                           밁
                                                                                                                                                                                 밁
                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                       B
                                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; ORGANISM: Saccharomyces cerevisiae US-09-788-657-15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 6
US-09-788-657-15
; Sequence 15, Application US/09788657
; Patent No. US20020123149A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NUMBER OF SEQ ID NOS: 25
SOFTWARE: FASTSEQ for Windows Version
SEQ ID NO 15
LENGTH: 769
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CURRENT APPLICATION NUMBER: US/09/788,657
CURRENT FILING DATE: 2001-02-21
PRIOR APPLICATION NUMBER: 60/184,336
PRIOR FILING DATE: 2000-02-23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Vogelstein, Bert
TITLE OF INVENTION: Methods for generating hypermutable
TITLE OF INVENTION: Yeast
FILE REFERENCE: 01107.00097
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Nicolaides, Nicholas
APPLICANT: Sass, Philip
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT:
 562
                                      529
                                                                                                             478
                                                                                                                                                445
                                                                                                                                                                                   418
                                                                                                                                                                                                                      415
                                                                                                                                                                                                                                                         361
                                                                                                                                                                                                                                                                                           360
                                                                                                                                                                                                                                                                                                                                308
                                                                                                                                                                                                                                                                                                                                                                   304
                                                                                                                                                                                                                                                                                                                                                                                                    255
                                                                                                                                                                                                                                                                                                                                                                                                                                     252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   59 ISVAKVNCVKEEISRYCGKEKDLMKAYLFKGNILLREFPTDTLFDVNAIVAHVLFALLFS 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local Similarity
les 161; Conserv
                                                                                                         DYKVPSIADDEKNALPISKDG-----YIRVPKERVNVNLTSIKKLREKVDDSIHRE
-----LLARHTEGKIESIPLASTHAQDIVQIITDALLEMFPEITVE--
                                                                    LI-LYSSVSVLGLFSPTMKTAKEDFSEAGNYLKGYVITGIYSEEDVLLLSTKYAASLPAL
                                                                                                                                              EF--PIIKMYKKGENPVSYAGMLGTKDLLKFIQLNRISYPVNITSIQEAEEYLSGELYKD
                                                                                                                                                                               QFNFEGSSTKRQLSEPKVTNVSHSQEAEKLTLNESEQPRDANTINDNDLKDQPKKKQKLG
                                                                                                                                                                                                                    AVKLKGTSTM------KQNVT
                                                                                                                                                                                                                                                       DTIESDRNRKSLRQAQVVENSYTTANSQLRKAKRQENKLVRIDAS-QAKITSFLSS--SQ
                                                                                                                                                                                                                                                                              ETVFRDRKRK-LPLELTVELTEETFNATVMAS----DSIVLFYAGWQAVSMAFLQSYIDV
                                                                                                                                                                                                                                                                                                                                HPTKRE----VRFL---SQDEITEKIANQLHAELSAIDTSRTFKASSISTNKPESLIPFN
                                                                                                                                                                                                                                                                                                                                                    VFKRAEEGVPVEFLVLHDVDLIISHVENNMHIEEIQEDEDNDMEGPDIDVQDDE----VA
                                                                                                                                                                                                                                                                                                                                                                                                    SISLIFFINNRLVTCDLLRRALNSVYSNYLPKGFRPFIYLGIVI---DPAAV----DVNV
                                                                                                                                                                                                                                                                                                                                                                                                                                     GLPLVFIVSQQ-ATYEADRRTAEWVAWRLLGKA------GVLLLLRDSLEVNIPQDANV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ----TLMEQPLTTLNIHL---FIKTMKAPLLT---EVAED-----PQQVSTVHL--QL 251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EVKYITNLEDLQNIEN-ALKGKANIIFSYVRAI----GIPEHRAVMEAGFVYGTTYQ---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      IIISPVNALKEMMENSIDANATMIDILVKEGGIKVLQI-TDNGSGINKADLPIL-CERFT
                                      LTDIFANLNYVGVVDEERRLAA----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GDSNYSLSVKPSYTVQDRIRTVFNKSVASNLITFHISKVEDLNLESVDGKVCNLNFISKK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PVAGKDGTTILVEDLFFNIPSRLRALRSHNDEYSKILDVVGRYAIHSK----DIGFSCKKF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -----YFFHCKLVLDLTQQCRR- 210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TSK-LQKFEDLSQIQTYGFRGEALASISHVARVTVTTKVKEDRCAWRVSYAEGKMLESPK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Kinzler, Kenneth
Grasso, Luigi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative 135;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3.2%; Score 132; DB 10;
19.2%; Pred. No. 0.017;
7ative 135; Mismatches 300;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3.0
                                   ------IQHDLKLFLIDYGSVCYEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        300; Indels 244;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 769;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                       417
                                                                                                                                                                                                                                                                                                                                                                                                                                     303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        254
                                    569
                                                                                                                                                                                 477
                                                                                                                                                                                                                                                                                           414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             194
                                                                      561
                                                                                                         528
                                                                                                                                              502
                                                                                                                                                                                                                                                                                                                                                                                                  307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          44;
```

```
APPLICANT: Lodes, Michael J.

APPLICANT: Mohamath, Raodoh

APPLICANT: Henderson, Robert A.

APPLICANT: Henderson, Darin R.

APPLICANT: Benson, Darin R.

APPLICANT: Secrist, Heather

TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR

TITLE OF INVENTION: THE THERAPY AND DIAGNOSIS OF LI

FILE REFERENCE: 210121.475C10

CURRENT APPLICATION NUMBER: US/09/854,133

CURRENT ETLING DATE: 2001-05-11

NUMBER OF SEQ ID NOS: 735

SOFTWARE: FastSEQ for Windows Version 3.0

SEQ ID NO 436

LENGTH: 396
                                                                                   рь
                                                                                                                           Ş
                                                                                                                                                                         밁
                                                                                                                                                                                                            QΥ
                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                                                                                                                                                                    QY
                                                                                                                                                                                                                                                                                                                                                                                                                                Вр
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Вb
                                                                                                                                                                                                                                                                                                                                               Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; ORGANISM: Homo sapiens US-09-854-133-436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δã
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-09-854-133-436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 3.1%; Score 129; DB 9; L Best Local Similarity 20.4%; Pred. No. 0.011; Matches 79; Conservative 54; Mismatches 134;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 436, Application US/09854133 Publication No. US20020183499A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TYPE: PRT
  353
                                                                                   294
                                                                                                                                                                         245
                                                                                                                                                                                                                   571
                                                                                                                                                                                                                                                             209
                                                                                                                                                                                                                                                                                                       524
                                                                                                                                                                                                                                                                                                                                                 149
                                                                                                                                                                                                                                                                                                                                                                                        497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            379 TEETFNATVMASDSIVLFYAGWQAVSMAFLQSYIDVAVKLKG--TSTMLLTRINCADWSD 436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  702 VPKVDTLD-----REHISSL-LEH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               722 KPPLPAYDFLSMIDAATSQRGTRKVPKCMKETDVQENDKEQHEDKSAVRKEPIETLRIKH
                                                                                                                                                                                                                                                                                                                                                                                                                                  91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  31
                                       ---PLPPLPLLVL-----VNLHSGGQ 683
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TADMFTHGIQSAAHFVMFFAPWCGHCQRLQPTWNDLGDKYNSMEDAKVYVAKVDCTAHSD
SKYSVRGYPTLLLFRGGKKVSEHSGGR
                                                                                                                             GTVNPQYKKAILTLVK-----QKYLDSFTPCW--LNLKNTPVGRGILRAYFD------
                                                                                                                                                                       RDLESUREYVESQLQRTETGATETVTPSEAPVLAAEPE-----ADKGTVLALTE
                                                                                                                                                                                                                 -----IES-IPLASTHAQDIVQIITDALLEMFPEITVENLPSYFRLQKPLLILFSD
                                                                                                                                                                                                                                                         VDCTQHYELCSGNQVRGY---
                                                                                                                                                                                                                                                                                                                                               PELKQGLYELSASNFELHVAQGDHFIKFFAPWCGHCKALAPTWEQLALGLEHSETVKIGK
                                                                                                                                                                                                                                                                                                                                                                                        GELYKDLILYSSVS-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VCTKONVTEFPIIKMYKKGENPVSYAGMLGTKDLLKFIQLNRISYPVNITSIQEAEEYLS 496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FYQIGLTDFANFGKIN---LQSTNVSD--DIVLYNLLSEFDELNDDASKEKIISKIWDMS
                                                                                   NTFDDTIAEGI-TFIKFYAPWCGHCKTLAPTWEELSKKEFPGLAGVKIAEVDCTAERNIC
                                                                                                                                                                                                                                                                                                     EDFSE----AGNYLKGYVITGIYSEEDVLLLSTKYAASLPALLLARHTEGK-----
                                                                                                                                                                                                                                                                                                                                                                                                                                VCSAQGVRGYPTLKLFKPGQEAVKYQGPRDFQTLENWMLQTLNEEPV--TPEPEVEPPSA 148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GYIPSLVKLPFFI----YRLGKEVDWEDEQECLD--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AYFDPLPPLPLLVLVNLHSGGQVFAFPSDQAIIEENLVLWLKKLEAGLENHITILPAQEW 721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SMLNEYYSIE-----LVNDGLDND------LKSVK------LKSLPL---LLK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -NLPSYFRLQKPLLILFSDGTVNPQYKKAILTLVKQKYLDSFTPCWLNLKNTPVGRGILR
  379
                                                                                                                                                                                                                                                             ----PTLLWFR--DGKKVDQYKGK
                                                                                                                                                                                                                                                                                                                                                                                      ------VLGL-FSPTMKTAK 523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OF LUNG CANCER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 396;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels 120;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GILREIALLYIPDM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                     352
                                                                                                                                                                                                                                                             244
                                                                                                                                                                                                                                                                                                                                                 208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    701
                                                                                                                                                                         293
                                                                                                                                                                                                                   620
                                                                                                                                                                                                                                                                                                       570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        15;
```

RESULT

```
RESULT 9
US-09-978-295A-90
                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                         Qy
                                                                                                                                                                                                                                                                                                                                                                DЬ
                                                                                                                                                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                 Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-738-973-436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-09-738-973-436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQ ID NO 436
LENGTH: 396
TYPE: PRT
ORGANISM: Homo sapiens
                                                                                  GENERAL INFORMATION:
APPLICANT: Ashkenaz
                                                                                                                     Sequence 90, Application US/09978295A Patent No. US20020156006A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Patent No. US20020110563A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT:
APPLICANT:
APPLICANT:
                                  APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CURRENT APPLICATION NUMBER: US/09/738,973
CURRENT FILING DATE: 2000-12-14
NUMBER OF SEC ID NOS: 587
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR TITLE OF INVENTION: THE THERAPY AND DIAGNOSIS OF LUNG CANCER FILE REFERENCE: 210121.475C9
                                                                    APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOFTWARE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
 APPLICANT:
                                                                                                                                                                                                                           353 SKYSVRGYPTLLLFRGGKKVSEHSGGR 379
                                                                                                                                                                                                                                                                                                                                                                                                    571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          379 TEETFNATVMASDSIVLFYAGWQAVSMAFLQSYIDVAVKLKG--TSTMLLTRINCADWSD 436
                                                                                                                                                                                                                                                                                                                              621 GTVNPQYKKAILTLVK-----QKYLDSFTPCW--LNLKNTPVGRGILRAYFD------
                                                                                                                                                                                                                                                                                                                                                                                                                                   209 VDCTQHYELCSGNQVRGY-----
                                                                                                                                                                                                                                                                                                                                                               245 RDLESLREYVESQLQRTETGATETVTPSEAPVLAAEPE----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       31 TADMFTHGIQSAAHFVMFFAPWCGHCQRLQPTWNDLGDKYNSMEDAKVYVAKVDCTAHSD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Similarity 20.4 nes 79; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                       EDFSE----AGNYLKGYVITGIYSEEDVLLLSTKYAASLPALLLARHTEGK------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PELKQGLYELSASNFELHVAQGDHFIKFFAPWCGHCKALAPTWEQLALGLEHSETVKIGK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GELYKDLILYSSVS------VLGL-FSPTMKTAK
                                                                                                                                                                                                                                                             ---PLPPLPLLVL----VNLHSGGQ 683
                                                                                                                                                                                                                                                                                                                                                                                                 -----IES-IPLASTHAQDIVQIITDALLEMFPEITVENLPSYFRLQKPLLILFSD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VCTKQNVTEFPIIKMYKKGENPVSYAGMLGTKDLLKFIQLNRISYPVNITSIQEAEEYLS
                                                                                                                                                                                                                                                                                              NTFDDTIAEGI-TFIKFYAPWCGHCKTLAPTWEELSKKEFPGLAGVKIAEVDCTAERNIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VCSAQGVRGYPTLKLFKPGQEAVKYQGPRDFQTLENWMLQTLNEEPV--TPEPEVEPPSA 148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           436, Application US/09738973
                                                                                    Ashkenazi, Avi
                Baker Kevin P.
Botstein, David
Desnoyers, Luc
Eaton, Dan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FastSEQ for Windows Version 3.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Kalos, Michael D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Benson, Darin R.
Elliot, Mark
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Secrist, Heather
Indirias, Carol Yoseph
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Algate, Paul A.
Ferrara, Napoleon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mannion,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mohamath, Raodoh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Henderson,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Lodes, Michael J.
Fling, Steven P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Steven G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3.1%; Score 129; DB 10; Length 396; 20.4%; Pred. No. 0.011;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Robert A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               54; Mismatches 134; Indels 120;
                                                                                                                                                                                                                                                                                                                                                                                                                                   -----PTLLWFR--DGKKVDQYKGK 244
                                                                                                                                                                                                                                                                                                                                                                ----ADKGTVLALTE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            496
                                                                                                                                                                                                                                                                                                                                665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             90
                                                                                                                                                                                                                                                                                                                                                                293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 15;
```

```
PRIOR FILING DATE: 2001-07-30
PRIOR APPLICATION NUMBER: 60/66250
PRIOR FILING DATE: 1997-10-17
PRIOR APPLICATION NUMBER: 60/064249
PRIOR ETLING DATE: 1997-11-03
PRIOR FILING DATE: 1997-11-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CURRENT APPLICATION NUMBER: US/09/978,295A CURRENT FILING DATE: 2001-10-15
               PRIOR FILING DATE: 1998-03-27
PRIOR APPLICATION NUMBER: 60/079920
                                                       PRIOR APPLICATION NUMBER: 60/079786
                                                                                                                                                                                                                                                                                                                    PRIOR FILING DATE: 1998-03-20 PRIOR APPLICATION NUMBER: 60/079294
                                                                                                                                                                                                                                                                                                                                                       PRIOR APPLICATION NUMBER: 60/078910
PRIOR FILING DATE: 1998-03-20
PRIOR APPLICATION NUMBER: 60/078939
                                                                                                                                                                                                                                                                                                                                                                                                                        PRIOR APPLICATION NUMBER: 60/078886
PRIOR FILING DATE: 1998-03-20
PRIOR APPLICATION NUMBER: 60/078936
PRIOR FILING DATE: 1998-03-20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRIOR FILING DATE: 1998-03-12
PRIOR APPLICATION NUMBER: 60/078004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRIOR APPLICATION NUMBER: 60/077791
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR APPLICATION NUMBER: 60/066364 PRIOR FILING DATE: 1997-11-21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRIOR APPLICATION NUMBER: 09/918585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FILE REFERENCE: P2630P1C11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE OF INVENTION: Secreted and Transmembrane Polypeptides and Nucleic TITLE OF INVENTION: Acids Encoding the Same
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT:
                                                                                                                       PRIOR FILING DATE: 1998-03-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER: 60/077641
FILING DATE: 1998-03-11
APPLICATION NUMBER: 60/077649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER: 60/077450
FILING DATE: 1998-03-10
APPLICATION NUMBER: 60/077632
FILING DATE: 1998-03-11
                                                                             APPLICATION NUMBER: 60/079728 FILING DATE: 1998-03-27
                                                                                                                                                                                                            APPLICATION NUMBER: 60/079664 FILING DATE: 1998-03-27
                                                                                                                                                                                                                                                      APPLICATION NUMBER: 60/079656 FILING DATE: 1998-03-26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILING DATE: 1998-03-11
                                                                                                                                           APPLICATION NUMBER: 60/079663
                                                                                                                                                                 APPLICATION NUMBER: 60/079689 FILING DATE: 1998-03-27
                                                                                                                                                                                                                                                                                                  FILING DATE: 1998-03-25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE: 1998-03-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Wood, William I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Williams, P. Mickey
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Tumas, Daniel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Shelton, David L. Stewart, Timothy A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gurney, Austin L.
Hillan, Kenneth J
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Godowski, Paul J.
Grimaldi, J. Christopher
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Fong,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pan, James;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Goddard, Audrey
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gerritsen, Mary E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gerber,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Filvaroff, Ellen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Roy, Margaret Ann
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Napier, Mary A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Kljavin, Ivar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gao,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sophia S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Wei-Qiang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sherman
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Nicholas F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Hanspeter
1998-03-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ٦.
```

```
QΥ
                                                밁
                                                                      δã
                                                                                                В
                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                   Qy
                                                                                                                       20
                                                                                                                                               밁
                                                                                                                                                                                               Вþ
                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                              B
                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                        Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                             PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                        PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                               PRIOR PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR
PRIOR
PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRIOR PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRIOR
                        638
                                                281
                                                                        579
                                                                                               245
                                                                                                                       524
                                                                                                                                                185
                                                                                                                                                                       497
                                                                                                                                                                                                                       437
                                                                                                                                                                                                                                                                      379
                                                                                                                                                                                               127
                                                                                                                                                                                                                                              67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION N
FILING DATE:
APPLICATION N
FILING DATE:
                                                                                                                                                                                                                                                                                                                                             FILING DATE: APPLICATION
                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER: FILING DATE: 1998-0 APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                  FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                      FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER: 60/085700 FILING DATE: 1998-05-15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FILING DATE:
APPLICATION 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FILING DATE: APPLICATION I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FILING DATE: APPLICATION 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICATION NUMBER: 60/
FILING DATE: 1998-05-07
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FILING DATE: 1998-05
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FILING DATE: 1998-0 APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER: 60/
FILING DATE: 1998-04-29
                                                                                                                                                                                                                                                             TEETFNATVMASDSIVLFYAGWQAVSMAFLQSYIDVAVKLKG--TSTMLLTRINCADWSD 436
                         KYLD----
                                                                    THAQDIVQIITDALLEMFPEITVENLPSYFRLQKPLLILFSDGTVNPQYKK-AILTLVKQ
                                                                                                                                                             GELYKDLILYSSVS--
                                                                                                                                                                                                           VCTKQNVTEFPIIKMYKKGENPVSYAGMLGTKDLLKFIQLNRISYPVNITSIQEAEEYLS
NFDDTIAEGITFIKFYAPWCGHCKTLAPTWEELSKKEFPGLAGVKIAEVDCTAERNICSK
                                              RDLESLREYVESQLQRTETGATETVTPS----EAPVL-----AAEPEADKGTVLALTEN
                                                                                               VDCTQHYELCSGNQVRGY
                                                                                                            PELKQGLYELSASNFELHVAQGDHFIKFFAPWCGHCKALAPTWEQLALGLEHSETVKIGK
                                                                                                                                                                                               VCSAQGVRGYPTLKLFKPGQEAVKYQGPRDFQTLENWMLQTLNEEPV--TPEPEVEPPSA
                                                                                                                                                                                                                                            TADMFTHGIQSAAHFVMFFAPWCGHCQRLQPTWNDLGDKYNSMEDAKVYVAKVDCTAHSD
                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                            NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NUMBER: 60: 1998-05-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NUMBER: 60/
: 1998-05-07
                                                                                                                                                                                                                                                                                                                                              NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NUMBER:
                                                                                                                                                                                                                                                                                                                                                        NUMBER: 60/085704
1998-05-15
                                                                                                                                                                                                                                                                                                                                                                                                       1998-05-15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1998-05-07
                                                                                                                                                                                                                                                                                                                                                                                   1998-05-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                       1998-05-15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1998-05-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1998-05-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1998-05-07
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1998-05-07
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1998-05-07
                                                                                                                                                                                                                                                                                                                                                                                                                                1998-05-15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1998-05-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1998-05-05
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1998-04-30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1998-05-07
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1998-05-06
                                                                                                                                                                                                                                                                                                        3.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           60/085323
                      ----SFTPCW--LNLKNTPVGRGILRAYFD------
                                                                                                                                                                                                                                                                                                                                              60/085697
                                                                                                                                                                                                                                                                                                                                                                                             60/085573
                                                                                                                                                                                                                                                                                                                                                                                                                    60/085580
                                                                                                                                                                                                                                                                                                                                                                                                                                            60/085579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   60/085689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   60/085338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        60/085339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                60/084643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 60/084600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    60/084366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   60/085582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         60/084627
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               60/084640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     60/084639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     60/084441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             60/084414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         60/084598
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             60/084637
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           60/083742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   60/083500
                                                                                                                                                                                                                                                                                              52;
                                                                                                                                                                                                                                                                                                        Score
Pred.
                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                        128; DB 9;
No. 0.015;
                                                                                                                                                                                                                                                                                              140;
                                                                                               PTLLWFR--DGKKVDQYKGK
                                                                                                                                                                                                                                                                                                                   Length 432;
                                                                                                                                                                       --VLGL-FSPTMKTAK 523
                                                                                                                                                                                                                                                                                              Indels 116;
```

PRIOR PRIOR PRIOR PRIOR PRIOR

FILING DATE: APPLICATION N

R FILING DATE: 1998-04-29
R APPLICATION NUMBER: 60/08
R FILING DATE: 1998-04-29
R APPLICATION NUMBER: 60/08
R FILING DATE: 1998-04-29
R APPLICATION NUMBER: 60/08
R FILING DATE: 1998-04-29

60/083558 60/083554 60/083545 60/083499 60/083496 60/083495 60/083392 60/083322 60/083336 60/082796 60/082797

PRIOR PRIOR PRIOR PRIOR

1998-04-29

998-04-29

APPLICATION FILING DATE: APPLICATION FILING DATE: APPLICATION

NUMBER: NUMBER: NUMBER: NUMBER: NUMBER:

1998-04-29

PRIOR PRIOR

PRIOR

PRIOR

FILING DATE: APPLICATION APPLICATION N FILING DATE: FILING DATE:

1998-04-28

PRIOR PRIOR

APPLICATION FILING DATE:

PRIOR PRIOR PRIOR PRIOR PRIOR PRIOR

R APPLICATION N R FILING DATE: R APPLICATION N

NUMBER:

.998-04-23 998-04-22

NUMBER:

1998-04-27

R FILING DATE: 1998-04
R APPLICATION NUMBER: (
R FILING DATE: 1998-04
R APPLICATION NUMBER: (

FILING DATE: 1998-04-15 APPLICATION NUMBER: 60/082568 APPLICATION NUMBER: 60/081952 FILING DATE: 1998-04-15 APPLICATION NUMBER: 60/081838

R FILING DATE:
R APPLICATION NO
R FILING DATE:
R APPLICATION NO

NUMBER: 60/082804

60/082704 60/082569

1998-04-1998-04-22 1998-04-21 1998-04-

APPLICATION NUMBER: 60/082700 FILING DATE: 1998-04-22

NUMBER:

Gaps

14;

126

184 496

637 280 578

244

665 330 PRIOR PRIOR

PRIOR PRIOR PRIOR PRIOR

APPLICATION NUMBER: 60/081049 FILING DATE: 1998-04-08 APPLICATION NUMBER: 60/081071 FILING DATE: 1998-04-08

PRIOR

APPLICATION NUMBER:

60/081195

PRIOR

1998-04-01 1998-04-01

60/080334 60/080333

PRIOR

PRIOR

PRIOR PRIOR

FILING DATE: FILING DATE: FILING DATE: 1998-0 APPLICATION NUMBER: FILING DATE: 1998-0 APPLICATION NUMBER:

APPLICATION NUMBER: 60/081070

1998-04-01

1998-04-08

PRIOR

PRIOR

FILING DATE: 1998-03-31
APPLICATION NUMBER: 60/080327
FILING DATE: 1998-04-01
APPLICATION NUMBER: 60/080328

FILING DATE: 1998-03-31 APPLICATION NUMBER: 60/080194 APPLICATION NUMBER: 60/080165

PRIOR

PRIOR PRIOR

R FILING DATE: 1998-03
R APPLICATION NUMBER: (1998-03)
R FILING DATE: 1998-03
R APPLICATION NUMBER:

NUMBER: 60, : 1998-03-31

60/080105 60/080107

1998-03-30

1998-03-31

PRIOR

PRIOR

APPLICATION NUMBER:

1998-04-09

60/081955

FILING DATE: 1998-04-09 APPLICATION NUMBER: 60/081229 FILING DATE: 1998-04-08 APPLICATION NUMBER: 60/081203

FILING DATE: 1998-04-15
APPLICATION NUMBER: 60/081817
APPLICATION 1998-04-15

FILING DATE: 1998-04-15 APPLICATION NUMBER: 60/081819 FILING DATE: 1998-04-15

```
멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 10
US-09-978-697-90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CURRENT APPLICATION NUMBER: US/09/978,697
CURRENT FILING DATE: 2001-10-16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE OF INVENTION: Secreted and Transmembrane Polypeptides and Nucleic TITLE OF INVENTION: Acids Encoding the Same FILE REFERENCE: P2630P1C27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     999
                                       OR APPLICATION NUMBER: 09/918585
OR FILING DATE: 2001-07-30
OR APPLICATION NUMBER: 60/062250
OR FILING DATE: 1997-10-17
OR APPLICATION NUMBER: 60/064249
OR FILING DATE: 1997-11-03
OR APPLICATION NUMBER: 60/065311
OR FILING DATE: 1997-11-13
OR APPLICATION NUMBER: 60/066364
OR FILING DATE: 1998-03-10
OR APPLICATION NUMBER: 60/07763
OR FILING DATE: 1998-03-11
OR APPLICATION NUMBER: 60/077641
OR FILING DATE: 1998-03-11
OR APPLICATION NUMBER: 60/077649
OR FILING DATE: 1998-03-11
OR APPLICATION NUMBER: 60/07771
OR APPLICATION NUMBER: 60/07791
OR APPLICATION NUMBER: 60/078004
OR FILING DATE: 1998-03-12
OR APPLICATION NUMBER: 60/078004
OR FILING DATE: 1998-03-13
OR APPLICATION NUMBER: 60/078004
OR FILING DATE: 1998-03-20
OR APPLICATION NUMBER: 60/078936
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                391 YSVRGYPTLLLFRGGKKVSEHSGGR 415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -PLPPLPLLVL-----VNLHSGGQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  90, Application US/09978697
5. US20020169284A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ashkenazi, Avi
Baker Kevin P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Fong,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Williams, P. Mickey Wood, William I.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Shelton, David L. Stewart, Timothy A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Kuo,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Goddard, Audrey
Godowski, Paul
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gerber, Hanspeter
Gerritsen, Mary E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gao,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Botstein, David
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Tumas, Daniel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Paoni
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gurney,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Grimaldi,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Filvaroff,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ferrara,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eaton, Dan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Desnoyers, Luc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Napier,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Kljavin,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Hillan, Kenneth J
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Wei-Qiang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Margaret Ann
con, David L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     rin, Ivar J.
Sophia S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Snerman
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Nicholas F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mary A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          i, J. Christopher
Austin L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Napoleon
f, Ellen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ٦.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ۲.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     683
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR
                                                                                                            PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR

                                               PRIOR PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRIOR
OR APPLICATION NUMBER: 60/08123
OR FILING DATE: 1998-04-08
OR APPLICATION NUMBER: 60/08123
OR FILING DATE: 1998-04-09
OR APPLICATION NUMBER: 60/08195
OR APPLICATION NUMBER: 60/08195
OR APPLICATION NUMBER: 60/081817
OR FILING DATE: 1998-04-15
OR APPLICATION NUMBER: 60/081819
OR APPLICATION NUMBER: 60/081819
OR FILING DATE: 1998-04-15
OR APPLICATION NUMBER: 60/08195
OR APPLICATION NUMBER: 60/08195
OR APPLICATION NUMBER: 60/081838
OR FILING DATE: 1998-04-15
OR APPLICATION NUMBER: 60/082569
OR FILING DATE: 1998-04-21
OR APPLICATION NUMBER: 60/082704
OR APPLICATION NUMBER: 60/082704
OR APPLICATION NUMBER: 60/082704
OR APPLICATION NUMBER: 60/082704
OR FILING DATE: 1998-04-22
OR APPLICATION NUMBER: 60/082700
OR FILING DATE: 1998-04-22
OR APPLICATION NUMBER: 60/082797
OR FILING DATE: 1998-04-22
OR APPLICATION NUMBER: 60/082797
OR APPLICATION NUMBER: 60/082796
OR APPLICATION NUMBER: 60/082336
OR FILING DATE: 1998-04-23
OR APPLICATION NUMBER: 60/083336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     OR APPLICATION NUMBER: 60/080194
OR FILING DATE: 1998-03-31
OR APPLICATION NUMBER: 60/080327
OR FILING DATE: 1998-04-01
OR APPLICATION NUMBER: 60/080328
OR FILING DATE: 1998-04-01
OR APPLICATION NUMBER: 60/080333
OR FILING DATE: 1998-04-01
OR APPLICATION NUMBER: 60/080334
OR FILING DATE: 1998-04-01
OR APPLICATION NUMBER: 60/081070
OR FILING DATE: 1998-04-08
OR APPLICATION NUMBER: 60/081070
OR FILING DATE: 1998-04-08
OR APPLICATION NUMBER: 60/081049
OR FILING DATE: 1998-04-08
OR APPLICATION NUMBER: 60/081071
OR FILING DATE: 1998-04-08
OR APPLICATION NUMBER: 60/081071
OR FILING DATE: 1998-04-08
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               OR FILING DATE: 1998-03-27
OR APPLICATION NUMBER: 60/079728
OR FILING DATE: 1998-03-27
OR APPLICATION NUMBER: 60/079786
OR FILING DATE: 1998-03-27
OR APPLICATION NUMBER: 60/079920
OR FILING DATE: 1998-03-30
OR APPLICATION NUMBER: 60/079923
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        R APPLICATION NUMBER: (R FILING DATE: 1998-03 R FILING DATE: 1998-03 R FILING DATE: 1998-03 R APPLICATION NUMBER: (R APPLICATION NUMBER: 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FILING DATE: 1998-03-31
APPLICATION NUMBER: 60/080107
FILING DATE: 1998-03-31
APPLICATION NUMBER: 60/080165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FILING DATE: 1998-0: APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: 60/079689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE: 1998-03-31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1998-03-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1998-03-30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1998-03-26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1998-03-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      60/080105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      60/079663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               60/079664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    60/079656
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     60/079294
```

```
õ
                                                           밁
                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRIOR
                     437
                                                                                              379
                                                         67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DR APPLICATION NUMBER: 60/084600
DR FILLING DATE: 1998-5-07
DR APPLICATION NUMBER: 60/084627
DR FILLING DATE: 1998-05-07
DR APPLICATION NUMBER: 60/084643
DR FILLING DATE: 1998-05-07
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DR APPLICATION NUMBER: 60/084414
RR FILLING DATE: 1998-05-06
DR APPLICATION NUMBER: 60/08441
RR FILLING DATE: 1998-05-06
DR APPLICATION NUMBER: 60/084637
RR FILLING DATE: 1998-05-07
                                                                                                                                                                                                          APPLICATION |
FILING DATE:
APPLICATION |
                                                                                                                                                                                                                                                                                     FILING DATE: 1998-0 APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER: FILING DATE: 1998-0 APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE: 1998-05-07
APPLICATION NUMBER: 60/084598
FILING DATE: 1998-05-07
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER: 60/084639
FILING DATE: 1998-05-07
APPLICATION NUMBER: 60/084640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FILING DATE: 1998-04-30
APPLICATION NUMBER: 60/084366
FILING DATE: 1998-05-05
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: 60/083500 FILING DATE: 1998-04-29 APPLICATION NUMBER: 60/083742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FILING DATE: 1998-04-29
APPLICATION NUMBER: 60/083559
FILING DATE: 1998-04-29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FILING DATE: 1998-04-29
APPLICATION NUMBER: 60/083554
FILING DATE: 1998-04-29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICATION NUMBER: 60/083499 FILING DATE: 1998-04-29 APPLICATION NUMBER: 60/083545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FILING DATE: 1998-04-28
APPLICATION NUMBER: 60/083392
FILING DATE: 1998-04-29
APPLICATION NUMBER: 60/083495
FILING DATE: 1998-04-29
                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: 60/085580
                                                                                                                                                                                                                                                                                                                                                                                   FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                              FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FILING DATE: APPLICATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FILING DATE: 1998-05-13
APPLICATION NUMBER: 60/085323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: 60/085339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FILING DATE: 1998-04-29
                                                                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER: 60/085579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: 60/083558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER: 60/083496
VCTKQNVTEFPIIKMYKKGENPVSYAGMLGTKDLLKFIQLNRISYPVNITSIQEAEEYLS
                                                         TADMFTHGIQSAAHFVMFFAPWCGHCQRLQPTWNDLGDKYNSMEDAKVYVAKVDCTAHSD 126
                                                                                            TEETFNATVMASDSIVLFYAGWQAVSMAFLQSYIDVAVKLKG--TSTMLLTRINCADWSD 436
                                                                                                                                                       Similarity
                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                          NUMBER: 60/085582
: 1998-05-15
                                                                                                                                                                                                                                                 NUMBER: 60/085704
                                                                                                                                                                                                                                                                                                                                                                                                                     NUMBER: 60/085700: 1998-05-15
                                                                                                                                                                                                                                                                                                                                                                                   1998-05-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1998-05-13
                                                                                                                                                                                                                                1998-05-1
                                                                                                                                                                                                                                                                                                         1998-05-15
                                                                                                                                                                                                                                                                                                                                                1998-05-15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1998-05-13
                                                                                                                                                                                                                                                                     1998-05-15
                                                                                                                                                   3.1%;
20.0%;
                                                                                                                                                                                                              60/085697
                                                                                                                                                                                                                                                                                       60/085573
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     60/085338
                                                                                                                                                                                                                                                                                                                                                                                                 689580/09
                                                                                                                                   52;
                                                                                                                               Score 128; DB 9;
Pred. No. 0.015;
2; Mismatches 140;
                                                                                                                                                                     Length 432;
                                                                                                                                 Indels
                                                                                                                                   116;
                                                                                                                               Gaps
```

14;

```
APPLICANT: Williams, P. Mickey
APPLICANT: Wood, William I.
TITLE OF INVENTION: Secreted and Transmembrane Pol
TITLE OF INVENTION: Acids Encoding the Same
FILE REFERENCE: P2630P1C9
CURRENT APPLICATION NUMBER: US/09/978,192A
CURRENT FILING DATE: 2001-10-15
PRIOR APPLICATION NUMBER: 09/918585
PRIOR APPLICATION NUMBER: 60/062250
PRIOR FILING DATE: 1997-10-17
PRIOR FILING DATE: 1997-10-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 11
US-09-978-192A-90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 90, Application US/09978192A Patent No. US20020177553A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
                                                                                                                                                                                                                                                                                                                                     APPLICANT:
                                                                                                                                                                                                                                                                                                                                                     APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                    APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Ashkenazi, Avi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       391 YSVRGYPTLLLFRGGKKVSEHSGGR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          579 THAQDIVQIITDALLEMFPEITVENLPSYFRLQKPLLILFSDGTVNPQYKK-AILTLVKQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           127
                                                                                                              APPLICATION NUMBER: 60/064249 FILING DATE: 1997-11-03
                                                            APPLICATION NUMBER: 60/065311
FILING DATE: 1997-11-13
APPLICATION NUMBER: 60/066364
FILING DATE: APPLICATION
                               APPLICATION NUMBER: 60/077450
                                              FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -PLPPLPLLVL-----VNLHSGGQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NFDDTIAEGITFIKFYAPWCGHCKTLAPTWEELSKKEFPGLAGVKIAEVDCTAERNICSK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RDLESLREYVESQLQRTETGATETVTPS----EAPVL-----AAEPEADKGTVLALTEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VDCTQHYELCSGNQVRGY---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EDFSE-----AGNYLKGYVITGIYSEEDVLLLSTKYAASLPALLLARHTEGKIESIPLAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GELYKDLILYSSVS---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PELKQGLYELSASNFELHVAQGDHFIKFFAPWCGHCKALAPTWEQLALGLEHSETVKIGK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VCSAQGVRGYPTLKLFKPGQEAVKYQGPRDFQTLENWMLQTLNEEPV--TPEPEVEPPSA
                                                                                                                                                                                                                                                                                                                                                                                                                                                Gurney, Austin L.
Hillan, Kenneth J
Kljavin, Ivar J.
Kuo, Sophia S.
                                                                                                                                                                                                                                                                                                 Tumas, Daniel Williams, P. Mickey Wood, William I.
                                                                                                                                                                                                                                                                                                                                              Roy, Margaret Ann
Shelton, David L.
Stewart, Timothy A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Baker Kevin P.
Botstein, David
                                                                                                                                                                                                                                                                                                                                                                                                   Paoni, Nicholas F
                                                                                                                                                                                                                                                                                                                                                                                                                     Pan, James;
                                                                                                                                                                                                                                                                                                                                                                                                                                   Napier, Mary A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Grimaldi, J. Christopher
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Godowski, Paul
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Goddard, Audrey
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gerritsen, Mary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gerber, Hanspeter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gao,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Fong,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Filvaroff, Ellen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eaton,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Desnoyers, Luc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Wei-Qiang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sherman
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Dan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Napoleon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ----SFTPCW--LNLKNTPVGRGILRAYFD------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ٦.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        683
                                                                                                                                                                                                                                                                                   Polypeptides and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           - PTLLWER - - DGKKVDQYKGK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ----VLGL-FSPTMKTAK
                                                                                                                                                                                                                                                                                     Nucleic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          637
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          665
```

	PRIOR	PRIOR
APPLICATIO FILING DAT APPLICATIO FILING DAT APPLICATIO FILING DAT APPLICATIO APPLICATIO APPLICATIO APPLICATIO FILING DAT APPLICATIO FILING DAT FILING DAT FILING DAT FILING DAT APPLICATIO FILING DAT APPLICATIO APPLICATIO	APPLII FILINA APPLII FILINA APPLII APPLII FILINA APPLII FI	APPLICATION FILING DATE
NUMBER: 6. 1998-05- NUMBER: 6. 11998-05- NUMBER: 6.	NUMBER: 1998-04 NUMBER: 1998-04 NUMBER: 1998-05 NUMBER: 1998-05 NUMBER: 1998-05 NUMBER: 1998-05 NUMBER: 1998-05 NUMBER: 1998-05 NUMBER: 1998-05 NUMBER: 1998-05 NUMBER:	NUMBER: 60/08256 1998-04-21 1998-04-22 1998-04-22 NUMBER: 60/08270 1998-04-22 NUMBER: 60/08270 1998-04-22 NUMBER: 60/08279 1998-04-23 NUMBER: 60/08279 1998-04-23 NUMBER: 60/08333 1998-04-23 NUMBER: 60/08333 1998-04-29 NUMBER: 60/08339 1998-04-29 NUMBER: 60/08349 NUMBER: 60/08355 NUMBER: 60/08355

PRIOR

OR APPLICATION NUMBER: 60/077641
OR APPLICATION NUMBER: 60/077649
OR FILING DATE: 1998-03-11
OR APPLICATION NUMBER: 60/077791
OR APPLICATION NUMBER: 60/077791
OR APPLICATION NUMBER: 60/078806
OR FILING DATE: 1998-03-12
OR APPLICATION NUMBER: 60/078936
OR FILING DATE: 1998-03-20
OR APPLICATION NUMBER: 60/078936
OR FILING DATE: 1998-03-20
OR APPLICATION NUMBER: 60/078930
OR FILING DATE: 1998-03-20
OR APPLICATION NUMBER: 60/079930
OR FILING DATE: 1998-03-26
OR FILING DATE: 1998-03-26
OR FILING DATE: 1998-03-26
OR APPLICATION NUMBER: 60/079664
OR FILING DATE: 1998-03-26
OR APPLICATION NUMBER: 60/079664
OR FILING DATE: 1998-03-26
OR APPLICATION NUMBER: 60/079664
OR FILING DATE: 1998-03-27
OR APPLICATION NUMBER: 60/079663
OR FILING DATE: 1998-03-27
OR APPLICATION NUMBER: 60/079663
OR FILING DATE: 1998-03-27
OR APPLICATION NUMBER: 60/079920
OR APPLICATION NUMBER: 60/079920
OR APPLICATION NUMBER: 60/079920
OR APPLICATION NUMBER: 60/079920
OR APPLICATION NUMBER: 60/080105
OR FILING DATE: 1998-03-27
OR APPLICATION NUMBER: 60/080105
OR FILING DATE: 1998-03-37
OR APPLICATION NUMBER: 60/080105
OR APPLICATION NUMBER: 60/080328
OR FILING DATE: 1998-03-31
OR APPLICATION NUMBER: 60/080328
OR FILING DATE: 1998-03-31
OR APPLICATION NUMBER: 60/080328
OR FILING DATE: 1998-04-01
OR APPLICATION NUMBER: 60/080328
OR FILING DATE: 1998-04-01
OR APPLICATION NUMBER: 60/080328
OR FILING DATE: 1998-04-01
OR APPLICATION NUMBER: 60/08107
OR APPLICATION NUMBER: 60/08107
OR APPLICATION NUMBER: 60/08129
OR A

Same

```
Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-999-832A-90
                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local S
Matches 77
                                                                                                                                                                                                                                                                                                                                                                                                            publication No
                                                                                                                                                                                                                                                                                                 APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                     GENERAL
                                         APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                              APPLICANT:
                                                                                                                                                                        APPLICANT:
                                                                                                                                                                                                                                                                        APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR PRIOR PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRIOR
PRIOR
PRIOR
                                                                                                                                                            APPLICANT:
                                                                                                                                                                                                                                APPLICANT:
                                                                                                                                                                                                                                            APPLICANT:
                                                                                                                                                                                                     APPLICANT:
                                                                                                                                                                                                                  APPLICANT:
                                                                                                                                                                                                                                                            APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OR FILING DATE: 1998-05-15

R APPLICATION NUMBER: 60/085573

OR FILING DATE: 1998-05-15

OR APPLICATION NUMBER: 60/085704

OR FILING DATE: 1998-05-15

OR APPLICATION NUMBER: 60/085697
    ę
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 YSVRGYPTLLLFRGGKKVSEHSGGR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TEETFNATVMASDSIVLFYAGWQAVSMAFLQSYIDVAVKLKG--TSTMLLTRINCADWSD 436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EDFSE----AGNYLKGYVITGIYSEEDVLLLSTKYAASLPALLLARHTEGKIESIPLAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TADMETHGIQSAAHEVMEFAPWCGHCQRLQPTWNDLGDKYNSMEDAKVYVAKVDCTAHSD
                                                                                                                                                                                                                                                                                                                                                                                                    INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          THAQDIVQIITDALLEMFPEITVENLPSYFRLQKPLLILFSDGTVNPQYKK-AILTLVKQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GELYKDLILYSSVS------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VCTKQNVTEEPIIKMYKKGENPVSYAGMLGTKDLLKFIQLNRISYPVNITSIQEAEEYLS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NFDDTIAEGITFIKFYAPWCGHCKTLAPTWEELSKKEFPGLAGVKIAEVDCTAERNICSK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KYLD-----SFTPCW--LNLKNTPVGRGILRAYFD------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RDLESLREYVESQLQRTETGATETVTPS----EAPVL-----AAEPEADKGTVLALTEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VCSAQGVRGYPTLKLFKPGQEAVKYQGPRDFQTLENWMLQTLNEEPV--TPEPEVEPPSA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -PLPPLPLLVL----VNLHSGGQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PELKQGLYELSASNFELHVAQGDHFIKFFAPWCGHCKALAPTWEQLALGLEHSETVKIGK
  INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   . Similarity 77; Conserv
                                                                                                                                                                                                                                                                                                                                                                         Ashkenazi, Avi
Baker Kevin P.
                                                                   Roy, Marga
                                                                                                                                            Kuo,
                                                                                                                                                                                                                                                                         Gao,
                                                                                                                                                                                                                                                                                   Fong,
                                                                                                                                                                                                                                                                                                                                                                                                               Application US/09999832A
No. US20020192706A1
              Williams, P. Mickey Wood, William I.
                                            Tumas,
                                                        Stewart,
                                                                                                                                                                      Gurney, Austin L.
Hillan, Kenneth J
                                                                                                                                                                                                    Grimaldi,
                                                                                                                                                                                                                              Goddard, Audrey
                                                                                                                                                                                                                                            Gerritsen, Mary E.
                                                                                                    Paoni,
                                                                                                                                                          Kljavin,
                                                                                                                                                                                                                Godowski, Paul
                                                                                                                                                                                                                                                         Gerber, Hanspeter
                                                                                                                                                                                                                                                                                                    Filvaroff,
                                                                                                                                                                                                                                                                                                                  Ferrara,
                                                                                                                                                                                                                                                                                                                                             Desnoyers, Luc
                                                                                                                                                                                                                                                                                                                                                         Botstein, David
                                                                                                                                Napier,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3.1%; Score 128; DB 9; I
ilarity 20.0%; Pred. No. 0.015;
Conservative 52; Mismatches 140;
                                                     , Margaret Ann
lton, David L.
wart, Timothy A.
                                                                                                                                                                                                                                                                        Wei-Qiang
                                                                                                                 James;
                                                                                                                                            Sophia S.
                                                                                                                                                                                                                                                                                      Sherman
                                          Daniel
                                                                                                  Nicholas F.
 Secreted and
                                                                                                                             Mary A.
                                                                                                                                                                                                                                                                                                                 Napoleon
                                                                                                                                                         Ivar J.
                                                                                                                                                                                                 J. Christopher
                                                                                                                                                                                                                                                                                                    Ellen
                                                                                                                                                                                                                  ٦.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pred. No. 0.01
32; Mismatches
Transmembrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               683
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ----VLGL-FSPTMKTAK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9; Length 432;
 Polypeptides and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  116;
 Nucleic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   14;
                                         PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
                                                                                                                                          PRIOR PRIOR PRIOR
                                                                                                                                                                                    PRIOR
PRIOR
                                                                                                                                                                                                                PRIOR
PRIOR
                                                                                                                                                                                                                                                       PRIOR
                                                                                                                                                                                                                                                                                     PRIOR
                                                                                                                                                                                                                                                                                                               PRIOR PRIOR
                                                                                                                                                                                                                                                                                                                                           PRIOR PRIOR
                                                                                                                                                                                                                                                                                                                                                                                     PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRIOR APPLICATION NUMBER: 09/918585
PRIOR FILING DATE: 2001-07-30
PRIOR APPLICATION NUMBER: 60/062250
PRIOR EILING DATE: 1997-10-17
PRIOR APPLICATION NUMBER: 60/064249
PRIOR FILING DATE: 1997-11-03
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE F
                                                                                                                                                                                                                                            PRIOR
                                                                                                                                                                                                                                                                        PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                 PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CURRENT APPLICATION NUMBER: US/09/999,832A CURRENT FILING DATE: 2001-10-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OR APPLICATION NUMBER: 60/078886
OR FILING DATE: 1998-03-20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             OF INVENTION: Acids Encoding the REFERENCE: P2630P1C63
                                                      FILING DATE: 1998-0. APPLICATION NUMBER:
                                                                               FILING DATE: 1998-04-01
APPLICATION NUMBER: 60/080334
                                                                                                                                                       APPLICATION NUMBER: 60/080327 FILING DATE: 1998-04-01
                                                                                                                                                                                    APPLICATION NUMBER: 60/080194 FILING DATE: 1998-03-31
                                                                                                                                                                                                                                                       FILING DATE:
APPLICATION I
                                                                                                                                                                                                                                                                                   FILING DATE: 1998-03-30 APPLICATION NUMBER: 60/080105
                                                                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER: FILING DATE: 1998-0 APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: 60/
FILING DATE: 1998-03-27
APPLICATION NUMBER: 60/
FILING DATE: 1998-03-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER: FILING DATE: 1998-0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FILING DATE: 1998-03-1
APPLICATION NUMBER: 60
FILING DATE: 1998-03-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FILLING DATE: 1998-03-11
APPLICATION NUMBER: 60/077649
FILING DATE: 1998-03-11
APPLICATION NUMBER: 60/077791
FILING DATE: APPLICATION
                            APPLICATION
                                                                                                              APPLICATION NUMBER:
                                                                                                                           FILING DATE:
                                                                                                                                          APPLICATION NUMBER:
                                                                                                                                                                                                                APPLICATION | FILING DATE:
                                                                                                                                                                                                                                            FILING DATE:
                                                                                                                                                                                                                                                                                                               FILING DATE:
APPLICATION I
                                                                                                                                                                                                                                                                                                                                          FILING DATE: 1998-0: APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                     FILING DATE: 1998-03-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FILING DATE: 1998-03-25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: 60/079294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FILING DATE: 1998-03-20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: 60/077641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER: FILING DATE: 1998-03
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: 60/077450 FILING DATE: 1998-03-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: 60/066364 FILING DATE: 1997-11-21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER: 60/
FILING DATE: 1997-11-13
                            NUMBER: 60/081049
                                                                                                                                                                                                                                                         NUMBER:
                                                                                                                                                                                                                                                                                                               NUMBER:
                                                                                                                                                                                                                             NUMBER:
                                                                      1998-04-01
                                                                                                                                                                                  1998-03-31
                                                                                                                                                                                                              1998-03-31
                                                                                                                                                                                                                                            1998-03-31
                                            1998-04-08
                                                                                                                             1998-04-01
                                                                                                                                                                                                                                                                        1998-03-31
                                                                                                                                                                                                                                                                                                                                1998-03-30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1998-03-11
                                                                                                                                                                                                                                                                                                                                                          1998-03-27
                                                                                                                                                                                                                                                                                                                                                                                                               1998-03-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1998-03-26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2001-10-
                                                        60/081070
                                                                                                                60/080333
                                                                                                                                            60/080328
                                                                                                                                                                                                                             60/080165
                                                                                                                                                                                                                                                                                                                                             60/079920
                                                                                                                                                                                                                                                                                                                                                                        60/079786
                                                                                                                                                                                                                                                         60/080107
                                                                                                                                                                                                                                                                                                                 60/079923
                                                                                                                                                                                                                                                                                                                                                                                                  60/079728
                                                                                                                                                                                                                                                                                                                                                                                                                              60/079663
                                                                                                                                                                                                                                                                                                                                                                                                                                                          60/079689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     60/079664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               60/077632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 60/079656
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   60/078004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   60/065311
```

R FILING DATE: 1998-04
R APPLICATION NUMBER:
R FILING DATE: 1998-04
R APPLICATION NUMBER:

998-04-08

60/081203 60/081195

1998-04-08

FILING DATE:

998-04-09

APPLICATION NUMBER: 60/081229 FILING DATE: 1998-04-09 APPLICATION NUMBER: 60/081955

998-04-15

OR APPLICATION NUMBER: 60/081952
OR FILING DATE: 1998-04-15
OR FILING DATE: 1998-04-15
OR FILING DATE: 1998-04-15
OR APPLICATION NUMBER: 60/082568
OR FILING DATE: 1998-04-21
OR APPLICATION NUMBER: 60/082569
OR APPLICATION NUMBER: 60/082569
OR APPLICATION NUMBER: 60/082569
OR APPLICATION NUMBER: 60/082569

FILING DATE:

1998-04-15 .998-04-15

60/081819 60/081817

APPLICATION NUMBER:

APPLICATION NUMBER: FILING DATE: 1998-0 FILING DATE: 1

```
QY
                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                                                                                                                                                                                                            Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   B
                                                                                                                                                                                            US-09-978-189-90
                                                                                                                                                                                                         RESULT 13
                                                                                                                    GENERAL INFORMATION:
APPLICANT: Ashkenazi, Avi
APPLICANT: Baker Kevin P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query
Best L
                                                                                                                                                                Sequence 90, Appropriation No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                        APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRIOR PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRIOR PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRIOR PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRIOR PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRIOR PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRIOR
              APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR
                                                                                                                                                                                                                                                 391 YSVRGYPTLLLFRGGKKVSEHSGGR 415
                                                                                                                                                                                                                                                                                                        331
                                                                                                                                                                                                                                                                                                                                   638
                                                                                                                                                                                                                                                                                                                                                             281
                                                                                                                                                                                                                                                                                                                                                                                                                   245
                                                                                                                                                                                                                                                                                                                                                                                                                                            524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        OR APPLICATION NUMBER: 60/085582
OR FILING DATE: 1998-05-15
OR APPLICATION NUMBER: 60/085700
OR FILING DATE: 1998-05-15
OR APPLICATION NUMBER: 60/085689
OR FILING DATE: 1998-05-15
OR APPLICATION NUMBER: 60/085579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            R FILING DATE: 1998-05-07
R APPLICATION NUMBER: 60/
R FILING DATE: 1998-05-13
R APPLICATION NUMBER: 60/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FILING DATE: 1998-05-15
APPLICATION NUMBER: 60/085580
FILING DATE: 1998-05-15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER: 60/085697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: 60/085704 FILING DATE: 1998-05-15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: 60/
FILING DATE: 1998-05-15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: 60/085323 FILING DATE: 1998-05-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FILING DATE: 1998-05-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: 60/084643 FILING DATE: 1998-05-07
                                                                                                                                                                                                                                                                                                                                   KYLD----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VCTKQNVTEFPIIKMYKKGENPVSYAGMLGTKDLLKFIQLNRISYPVNITSIQEAEEYLS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TADMETHGIQSAAHEVMEEAPWCGHCQRLQPTWNDLGDKYNSMEDAKVYVAKVDCTAHSD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TEETFNATYMASDSIVLFYAGWQAVSMAFLQSYIDVAVKLKG--TSTMLLTRINCADWSD
                                                                                                                                                                                                                                                                                                                                                          RDLESLREYVESQLQRTETGATETVTPS---
                                                                                                                                                                                                                                                                                                                                                                                     THAQDIVQIITDALLEMFPEITVENLPSYFRLQKPLLILFSDGTVNPQYKK-AILTLVKQ
                                                                                                                                                                                                                                                                                                                                                                                                                                          EDFSE----AGNYLKGYVITGIYSEEDVLLLSTKYAASLPALLLARHTEGKIESIPLAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VCSAQGVRGYPTLKLFKPGQEAVKYQGPRDFQTLENWMLQTLNEEPV--TPEPEVEPPSA
                                                                                                                                                                                                                                                                                                      NFDDTIAEGITFIKFYAPWCGHCKTLAPTWEELSKKEFPGLAGVKIAEVDCTAERNICSK
                                                                                                                                                                                                                                                                                                                                                                                                                  VDCTQHYELCSGNQVRGY - - - - - -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PELKQGLYELSASNFELHVAQGDHFIKFFAPWCGHCKALAPTWEQLALGLEHSETVKIGK
                                                                                                                                                                                                                                                                            -PLPPLPLLVL-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
            Gao, Wei-Qiang
                                                                                                                                                                Application US/09978189
Gerber, Hanspeter
Gerritsen, Mary E
                                                   Ferrara, Na
Filvaroff,
                                                                                Eaton, Dan
                                                                                           Desnoyers, Luc
                                                                                                           Botstein, David
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                : 1998-05-15
NUMBER: 60/085582
                                                                   Napoleon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3.1%;
                                                     Ellen
                                                                                                                          ק
                                                                                                                                                                                                                                                                           VNLHSGGQ
                                                                                                                                                                                                                                                                                                                                -----SFTPCW--LNLKNTPVGRGILRAYFD------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    60/085573
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             60/085339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  60/085338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       52;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 128; DB
Pred. No. 0.019
52; Mismatches
                                                                                                                                                                                                                                                                            683
                                                                                                                                                                                                                                                                                                                                                             -EAPVL-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .015;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          140;
                                                                                                                                                                                                                                                                                                                                                                                                                  -PTLLWFR--DGKKVDQYKGK
                                                                                                                                                                                                                                                                                                                                                           --AAEPEADKGTVLALTEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 432;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels 116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         496
                                                                                                                                                                                                                                                                                                                                                                                       637
                                                                                                                                                                                                                                                                                                                                                                                                                                            578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    126
                                                                                                                                                                                                                                                                                                                                                             330
                                                                                                                                                                                                                                                                                                                                 665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         244
```

14;

OR APPLICATION NUMBER: 60/083495
OR FILING DATE: 1998-04-29
OR APPLICATION NUMBER: 60/083496
OR FILING DATE: 1998-04-29
OR APPLICATION NUMBER: 60/083499
OR FILING DATE: 1998-04-29
OR APPLICATION NUMBER: 60/083545
OR APPLICATION NUMBER: 60/083545
OR APPLICATION NUMBER: 60/083545

FILING DATE: 1998-04-28 APPLICATION NUMBER: 60/083392

FILING DATE: 1998-04-27 APPLICATION NUMBER: 60/ FILING DATE: 1998-0 APPLICATION NUMBER:

60/083322 60/083336 APPLICATION NUMBER: 60/082796 APPLICATION NUMBER: 60/082797 FILING DATE: 1998-04-22

1998-04-23

APPLICATION NUMBER: APPLICATION NUMBER: 60/ FILING DATE: 1998-04-22 APPLICATION NUMBER: 60/082704 FILING DATE: 1998-04-22

60/082700

60/082804

FILING DATE: 1998-04-22

FILING DATE: 1998-04-29

R FILING DATE: 1998-04-29
R APPLICATION NUMBER: 60/083559
R FILING DATE: 1998-04-29
R APPLICATION NUMBER: 60/083500
R FILING DATE: 1998-04-29
R APPLICATION NUMBER: 60/083742
R APPLICATION NUMBER: 60/083742

APPLICATION NUMBER: 60/083558 FILING DATE: 1998-04-29

APPLICATION NUMBER: FILING DATE: 1998-0

NUMBER: 60/083554 1998-04-29

RIOR FILING DATE: 1998-05-07

RIOR APPLICATION NUMBER: 60/084640

FILING DATE: 1998-05-07

OR APPLICATION NUMBER: 60/084600

OR FILING DATE: 1998-05-07

OR APPLICATION NUMBER: 60/084627

OR APPLICATION NUMBER: 60/084627

OR APPLICATION NUMBER: 60/084627

OR FILING DATE: 1998-05-07

APPLICATION NUMBER: FILING DATE: 1998-0: APPLICATION NUMBER:

1998-05-06

60/084441

FILING DATE:

NUMBER: 60/084637 1998-05-07

APPLICATION NUMBER: 60/084366 FILING DATE: 1998-05-05 APPLICATION NUMBER: 60/084414 FILING DATE: 1998-05-06

```
CURRENT
PRIOR AP
PRIOR FI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT
                                                                                  PRIOR
                                                                                                                                                                                                                                                                                                                                                                        PRIOR
PRIOR
PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CURRENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FILE
OR APPLICATION NUMBER: 60/06250
OR FILING DATE: 1997-10-17
OR APPLICATION NUMBER: 60/064249
OR FILING DATE: 1997-11-03
OR APPLICATION NUMBER: 60/06364
OR FILING DATE: 1997-11-13
OR APPLICATION NUMBER: 60/077450
OR FILING DATE: 1998-03-10
OR APPLICATION NUMBER: 60/077641
OR APPLICATION NUMBER: 60/077804
OR FILING DATE: 1998-03-12
OR APPLICATION NUMBER: 60/07804
OR FILING DATE: 1998-03-12
OR APPLICATION NUMBER: 60/07891
OR APPLICATION NUMBER: 60/07891
OR APPLICATION NUMBER: 60/07893
OR APPLICATION NUMBER: 60/07893
OR APPLICATION NUMBER: 60/07963
OR APPLICATION NUMBER: 60/07964
OR FILING DATE: 1998-03-20
OR APPLICATION NUMBER: 60/079664
OR FILING DATE: 1998-03-27
OR APPLICATION NUMBER: 60/079664
OR FILING DATE: 1998-03-27
OR APPLICATION NUMBER: 60/079664
OR APPLICATION NUMBER: 60/079663
OR APPLICATION NUMBER: 60/079663
OR APPLICATION NUMBER: 60/079663
OR APPLICATION NUMBER: 60/079766
OR APPLICATION NUMBER: 60/079920
OR APPLICATION NUMBER: 60/079920
OR APPLICATION NUMBER: 60/079920
OR APPLICATION NUMBER: 60/079920
OR APPLICATION NUMBER: 60/0799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    E OF INVENTION: Acids Encoding REFERENCE: P2630P1C7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NT FILING DATE: 2001-10-15
APPLICATION NUMBER: 09/918585
FILING DATE: 2001-07-30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              얼얼
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            INVENTION: Secreted and INVENTION: Acids Encods
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Goddard, Audrey
Godowski, Paul J.
Grimaldi, J. Christopher
Gurney, Austin L.
Hillan, Kenneth J
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Paoni, Nicholas F.
Roy, Margaret Ann
Shelton, David L.
Stewart, Timothy A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Williams,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Tumas,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Kljavin,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sophia S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   William
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Daniel
ns, P. Mickey
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mary A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ivar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US/09/978,189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Transmembrane Polypeptides ing the Same
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Nucleic
                                                          PRIOR
                                                                                  PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
PRIOR
                                                                                                                                                                                                                                                                                              PRIOR
                                                                                                                                                                                                                                                                                                                                              PRIOR PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                PRIOR PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRIOR PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRIOR PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRIOR PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DATE: 1998-04-15
DR APPLICATION NUMBER: 60/081819
DR APPLICATION NUMBER: 60/081819
DR APPLICATION NUMBER: 60/081952
DR APPLICATION NUMBER: 60/081952
DR FILING DATE: 1998-04-15
DR APPLICATION NUMBER: 60/082568
DR FILING DATE: 1998-04-21
DR APPLICATION NUMBER: 60/082569
DR FILING DATE: 1998-04-21
DR APPLICATION NUMBER: 60/082704
DR FILING DATE: 1998-04-22
DR APPLICATION NUMBER: 60/082704
DR FILING DATE: 1998-04-22
DR APPLICATION NUMBER: 60/082704
DR FILING DATE: 1998-04-22
DR APPLICATION NUMBER: 60/082700
DR FILING DATE: 1998-04-22
DR APPLICATION NUMBER: 60/082700
DR FILING DATE: 1998-04-22
DR APPLICATION NUMBER: 60/082797
DR APPLICATION NUMBER: 60/082796
DR APPLICATION NUMBER: 60/08279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DR FILING DATE: 1998-04-08
DR APPLICATION NUMBER: 60/081071
DR FILING DATE: 1998-04-08
DR APPLICATION NUMBER: 60/081195
DR FILING DATE: 1998-04-08
DR FILING DATE: 1998-04-09
DR APPLICATION NUMBER: 60/081203
DR FILING DATE: 1998-04-09
DR FILING DATE: 1998-04-09
DR APPLICATION NUMBER: 60/081229
DR FILING DATE: 1998-04-05
DR APPLICATION NUMBER: 60/081955
DR APPLICATION NUMBER: 60/081955
DR APPLICATION NUMBER: 60/081817
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           R APPLICATION NUMBER: 60/08
R FILING DATE: 1998-04-01
R FILING DATE: 1998-04-01
R FILING DATE: 1998-04-01
R FILING DATE: 1998-04-01
R APPLICATION NUMBER: 60/08
R FILING DATE: 1998-04-08
R FILING DATE: 1998-04-08
R APPLICATION NUMBER: 60/08
R APPLICATION NUMBER: 60/08
                                                                                                                                                                                                                                                                                         A APPLICATION N

FILING DATE:
A APPLICATION NI
R FILING DATE:
  A APPLICATION N
A FILING DATE:
A PPLICATION N
A FILING DATE:
A APPLICATION N
A PPLICATION N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  R APPLICATION NUMBER: (R FILING DATE: 1998-03)
R APPLICATION NUMBER: (R FILING DATE: 1998-03)
                                                                                                                                                                                    APPLICATION N
FILING DATE:
APPLICATION N
FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILING DATE: 1998-03-31
APPLICATION NUMBER: 60/080327
FILING DATE: 1998-04-01
                                                                                                                                                                                                                                                                                                                                           I NUMBER: 60/0
E: 1998-04-29
                               NUMBER: 60/
: 1998-04-30
                                                                                  NUMBER: 60/
: 1998-04-29
                                                                                                                                  NUMBER: 60/
: 1998-04-29
                                                                                                                                                                                                                 NUMBER:
                                                                                                                                                                                                                                                                    NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                NUMBER: 60/
: 1998-04-29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NUMBER: 60/080165
: 1998-03-31
                                                                                                                                                                                                                                                                                                                      NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NUMBER:
                                                                                                                                                                                       1998-04-29
                                                                                                                                                                                                                                                                                           1998-04-29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1998-04-29
                                                                                                                                                                                                                                            1998-04-29
                                                                                                                                                                                                                                                                                                                                                                                                                                                     1998-04-29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1998-04-28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1998-04-27
                                                          60/083742
                                                                                                                                                                                                                                                                                                                                                                        60/083499
                                                                                                            60/083500
                                                                                                                                                            60/083559
                                                                                                                                                                                                                 60/083558
                                                                                                                                                                                                                                                                    60/083554
                                                                                                                                                                                                                                                                                                                      60/083545
                                                                                                                                                                                                                                                                                                                                                                                                                           60/083496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             60/083495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             60/083392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                60/083322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             60/083336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      60/081049
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        60/080334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          60/080328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          60/080194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   60/081070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        60/080333
```

```
δδ
                                                                                                                                                                       Qy
                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                     망
                                                                                                                                                                                                                                                                                                                   Q
                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q
                                                                    В
                                                                                                  ρy
                                                                                                                                         DЬ
                                                                                                                                                                                                                                              Qy
 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local S
Matches 77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                               379 TEETFNATVMASDSIVLFYAGWQAVSMAFLQSYIDVAVKLKG--TSTMLLTRINCADWSD 436
 391
                                                                                                                                           281
                                                                                                                                                                                                                                                                                       185
                                                                                                                                                                                                                                                                                                                          497
                                                                                                                                                                                                                                                                                                                                                            127
                                                                                                                                                                                                                                                                                                                                                                                               437
                                                                                                                                                                                                                                                                                                                                                                                                                             67 TADMETHGIQSAAHEVMEFAPWCGHCQRLQPTWNDLGDKYNSMEDAKVYVAKVDCTAHSD 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FILING DATE: 1998-05-15
APPLICATION NUMBER: 60/085704
FILING DATE: 1998-05-15
APPLICATION NUMBER: 60/085697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FILING DATE: 1998-05-15
APPLICATION NUMBER: 60/085700
FILING DATE: 1998-05-15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FILING DATE: 1998-05-13
APPLICATION NUMBER: 60/085338
FILING DATE: 1998-05-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: 60/084643 FILING DATE: 1998-05-07 APPLICATION NUMBER: 60/085339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FILING DATE: 1998-0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER: 60/084598
FILING DATE: 1998-05-07
APPLICATION NUMBER: 60/084600
FILING DATE: 1998-5-07
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FILING DATE: 1998-05-07
APPLICATION NUMBER: 60/084640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER: 60/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FILING DATE: 1998-05-06
APPLICATION NUMBER: 60/084637
FILING DATE: 1998-05-07
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FILING DATE: 1998-05-05
APPLICATION NUMBER: 60/084414
FILING DATE: 1998-05-06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FILING DATE: 1998-05-15
APPLICATION NUMBER: 60/085580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: 60/085579 FILING DATE: 1998-05-15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: 60/085689 FILING DATE: 1998-05-15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: 60/084639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER: 60/085323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER: 60/084627
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                        VCTKQNVTEFPIIKMYKKGENPVSYAGMLGTKDLLKFIQLNRISYPVNITSIQEAEEYLS
YSVRGYPTLLLFRGGKKVSEHSGGR 415
                                 -PLPPLPLLVL-----VNLHSGGQ 683
                                                                                                                                                                           THAQDIVQIITDALLEMFPEITVENLPSYFRLQKPLLILFSDGTVNPQYKK-AILTLVKQ
                                                                                                                                                                                                              VDCTQHYELCSGNQVRGY-----
                                                                                                                                                                                                                                                EDFSE-----AGNYLKGYVITGIYSEEDVLLLSTKYAASLPALLLARHTEGKIESIPLAS
                                                                                                                                                                                                                                                                                   PELKQGLYELSASNFELHVAQGDHFIKFFAPWCGHCKALAPTWEQLALGLEHSETVKIGK
                                                                                                                                                                                                                                                                                                                       GELYKDLILYSSVS-----
                                                                                                                                                                                                                                                                                                                                                          VCSAQGVRGYPTLKLFKPGQEAVKYQGPRDFQTLENWMLQTLNEEPV--TPEPEVEPPSA
                                                                    HeadTiaeGitfikeYapwcghcktlaptweelskkeepglagkiaevdctaernicsk
                                                                                                                                         RDLESLREYVESQLQRTETGATETVTPS----EAPVL-----AAEPEADKGTVLALTEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
77; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1998-05-07
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1998-05-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3.1%; Score 128; DB 9; 1
20.0%; Pred. No. 0.015;
ative 52; Mismatches 140;
                                                                                                    -----SFTPCW--LNLKNTPVGRGILRAYFD------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 60/085573
5-15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             60/085582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 60/084441
                                                                                                                                                                                                              -----PTLLWFR--DGKKVDQYKGK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 432;
                                                                                                                                                                                                                                                                                                                   ---VLGL-FSPTMKTAK 523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels 116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                           637
                                                                                                                                                                                                              280
                                                                                                                                                                                                                                                                                                                                                          184
                                                                                                                                                                                                                                                  578
                                                                                                                                                                                                                                                                                                                                                                                              496
                                                                                                        665
                                                                                                                                                                                                                                                                                   244
```

14;

```
RESULT 15
US-10-176-758-74
                                                                                                                                                                                                                                                                   Q
                                                                                                                                                                                                                                                                                                                                                                                                20
                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        οy
                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                     B
                                                                                                                                                                                                                                                                                                                                  δã
                                                                                                                                                                                                                                                                                                                                                                   Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; ORGANISM: Homo Sapien US-10-174-590-74
                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 14
US-10-174-590-74
                                                             Sequence 74, Application US/10176758 Publication No. US20030008353A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Prior application removed -
NUMBER OF SEQ ID NOS: 612
SEQ ID NO 74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 74, Application US/10174590 Publication No. US20030008352A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT:
APPLICANT:
APPLICANT: Baker, Kevin P.
APPLICANT: Chen, Jian
APPLICANT: Desnoyers, Luc
APPLICANT: Goddard, Audre
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CURRENT APPLICATION NUMBER: US/10/174,590 CURRENT FILING DATE: 2002-06-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE OF INVENTION: SECRETED AND TRANSMEMBRANE POLYPEPTIDES AND NUCLEIC TITLE OF INVENTION: ACIDS ENCODING THE SAME FILE REFERENCE: P3430R1C42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Baker, Kevin P. APPLICANT: Chen, Jian
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LENGTH: 432
TYPE: PRT
                                                                                                                                                                                                                                        331
                                                                                                                                                                          391
                                                                                                                                                                                                         666
                                                                                                                                                                                                                                                                        638
                                                                                                                                                                                                                                                                                                       281
                                                                                                                                                                                                                                                                                                                                     579
                                                                                                                                                                                                                                                                                                                                                                    245
                                                                                                                                                                                                                                                                                                                                                                                                    524
                                                                                                                                                                                                                                                                                                                                                                                                                                   185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        379 TEETFNATVMASDSIVLFYAGWQAVSMAFLQSYIDVAVKLKG--TSTMLLTRINCADWSD 436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local
                                                                                                                                                                                                         -PLPPLPLLVL-----VNLHSGGQ
                                                                                                                                                                                                                                        NFDDTIAEGITFIKFYAPWCGHCKTLAPTWEELSKKEFPGLAGVKIAEVDCTAERNICSK 390
                                                                                                                                                                                                                                                                                                                                                                   VDCTQHYELCSGNQVRGY----
                                                                                                                                                                                                                                                                                                                                                                                        EDFSE----AGNYLKGYVITGIYSEEDVLLLSTKYAASLPALLLARHTEGKIESIPLAS
                                                                                                                                                                                                                                                                                                                                                                                                                                 PELKQGLYELSASNFELHVAQGDHFIKFFAPWCGHCKALAPTWEQLALGLEHSETVKIGK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VCSAQGVRGYPTLKLFKPGQEAVKYQGPRDFQTLENWMLQTLNEEPV--TPEPEVEPPSA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TADMETHGIQSAAHEVMEFAPWCGHCQRLQPTWNDLGDKYNSMEDAKVYVAKVDCTAHSD 126
                                                                                                                                                                          YSVRGYPTLLLFRGGKKVSEHSGGR
                                                                                                                                                                                                                                                                                                     RDLESLREYVESQLQRTETGATETVTPS----EAPVL-----AAEPEADKGTVLALTEN
                                                                                                                                                                                                                                                                                                                                  THAQDIVQIITDALLEMFPEITVENLPSYFRLQKPLLILFSDGTVNPQYKK-AILTLVKQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GELYKDLILYSSVS-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VCTKQNVTEFPIIKMYKKGENPVSYAGMLGTKDLLKFIQLNRISYPVNITSIQEAEEYLS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Smith, Victoria Watanabe, Colin K Wood, William I.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Zhang, Zemin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Goddard, Audrey
Godowski, Paul J.
 Desnoyers, Luc
Goddard, Audrey
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gurney, Austin L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Desnoyers, Luc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3.1%; Score 128; 20.0%; Pred. No. 0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 See File Wrapper
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       52;
                                                                                                                                                                                                                                                                      --SFTPCW--LNLKNTPVGRGILRAYFD-
                                                                                                                                                                           415
                                                                                                                                                                                                         683
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                   -----PTLLWFR--DGKKVDQYKGK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                            -----VLGL-FSPTMKTAK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Or,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         140;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Palm
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 432;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                   280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              496
                                                                                                                                                                                                                                                                        665
                                                                                                                                                                                                                                                                                                       330
                                                                                                                                                                                                                                                                                                                                                                                                    578
                                                                                                                                                                                                                                                                                                                                                                                                                                   244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       14;
```

```
APPLICANT: Wood, William I.

APPLICANT: Wood, William I.

APPLICANT: Zhang, Zemin

TITLE OF INVENTION: SECRETED AND TRANSMEMBRANE POLYPEPTIDES AND NUCLEIC

TITLE OF INVENTION: ACIDS ENCODING THE SAME

FILE REFERENCE: P3430R1C104

CURRENT APPLICATION NUMBER: US/10/176,758

CURRENT APPLICATION NUMBER: US/10/176,758

CURRENT FILING DATE: 2002-06-21

Prior Application removed - See File Wrapper or Palm

NUMBER OF SEQ ID NO 74

LENGTH: 432

TYPE: PRT

GRANISM: Homo Sapien

US-10-176-758-74
                                                                                                                                 8
                                                                                                                                                                                    ď
  В
                                        Q
                                                                                           밁
                                                                                                                                                                                                                             Q
                                                                                                                                                                                                                                                                             Вþ
                                                                                                                                                                                                                                                                                                                        Q
                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                   ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match 3.1%; Score 128; DB 9; Length 432; Best Local Similarity 20.0%; Pred. No. 0.015; Matches 77; Conservative 52; Mismatches 140; Indels 116; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   379 TEETFNATVMASDSIVLFYAGWQAVSMAFLQSYIDVAVKLKG--TSTMLLTRINCADWSD 436
391 YSVRGYPTLLLFRGGKKVSEHSGGR 415
                                           666 -PLPPLPLLVL-----VNLHSGGO 683
                                                                                      331 NFDDTIAEGITFIKFYAPWCGHCKTLAPTWEELSKKEFPGLAGVKIAEVDCTAERNICSK 390
                                                                                                                                                                                                              579 THAQDIVQIITDALLEMFPEITVENLPSYFRLQKPLLILFSDGTVNPQYKK-AILTLVKQ 637
                                                                                                                                                                                                                                                                                                          524 EDFSE----AGNYLKGYVITGIYSEEDVLLLSTKYAASLPALLLARHTEGKIESIPLAS 578
                                                                                                                                                                                                                                                                                                                                                                                                                                                            127 VCSAQGVRGYPTIKLFKÞGQEAVKYQGÞRDÞQTLENWMLQTLNEEÞV--TÞEÞEVEÞÞSA 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          437 VCTKONVTEFPIIKMYKKGENPVSYAGMLGTKDLLKFIQLNRISYPVNITSIQEAEEYLS 496
                                                                                                                                           638 KYLD-----
                                                                                                                                                                                    281 RDLESLREYVESQLQRTETGATETVTPS----EAPVL-----AAEPEADKGTVLALTEN 330
                                                                                                                                                                                                                                                                               245 VDCTQHYELCSGNQVRGY-----
                                                                                                                                                                                                                                                                                                                                                                        185 PELKQGLYELSASNFELHVAQGDHFIKFFAPWCGHCKALAPTWEQLALGLEHSETVKIGK 244
                                                                                                                                                                                                                                                                                                                                                                                                                 497 GELYKDLILYSSVS-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        67 TADMETHGIQSAAHEVMEEAPWCGHCQRLQPTWNDLGDKYNSMEDAKVYVAKVDCTAHSD 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gurney, Austin L.
Pan, James
Smith, Victoria
Watanabe, Colin K.
Wood, William I.
                                                                                                                                      -----SFTPCW--LNLKNTPVGRGILRAYFD------
                                                                                                                                                                                                                                                                             -----PTLLWFR--DGKKVDQYKGK 280
                                                                                                                                                                                                                                                                                                                                                                                                                   -----VLGL-FSPTMKTAK 523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     14;
```

Search completed: March 13, 2003, 17:18:06
Job time: 21 secs

```
Minimum
Maximum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB seq
182
169.5.5
169.5.5
169.5.5
169.5.5
169.5.5
166.5.5
1154.5
1154.5
1154.5
1146.5
148.1
148.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.1
149.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               March 13, 2003, 17:11:47; Search time 21 Seconds (without alignments) 3694.309 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-09-847-046-2
4142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         283224 seqs, 96134422 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PIR_73:*
MFSGFNVFRVGISFVIMCIF.....FKEAEKSFRRDKELGCSKVN 807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GenCore version 5.1.4_p5_4578 Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              pir1:*
pir2:*
pir3:*
pir4:*
22667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length DB
7962591
F962691
S44756
S34275
JC57942
JC57942
JC57942
JC2595
K55507
S41661
JC76724
A28807
F41661
JC76724
A28807
A28
                          ISHUSS
ISBOSS
T01115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            IJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SUMMARIES
                                            protein disulfide-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        hypothetical pr
probable protei
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                protein disulfide-
```

5 4	43	41 42	40	39	38	37	36	ω 5	34	ω ω	32	ω μ	30
127	127.5	$128 \\ 127.5$	128.5	130.5	130.5	131	131.5	131.5	132	133	133	133.5	133.5
ω. 1	ω ω - <u>-</u> -	ωω 	3.1	3.2	3.2	3.2	3 .2	3. 2	3.2	ა .2	ω .ν	3.2	3.2
443	7 4 8 9 6 0 0	977 488	2149	485	363	1088	574	364	2829	572	361	638	584
2	2	NN	Ŋ	N	N	Ľ	N	N	N	N	Ŋ	-	N
D86183	S68280	E86349 T23055	T47655	S71863	T37630	P1XRSR	T25887	T09614	A42771	T32636	T00437	ISMSER	S06318
	protein disulfide-	hypothetical prote hypothetical prote	hypothetical prote	protein disulfide-	protein disulfide-	inner layer protei	hypothetical prote	probable protein d	reticulocyte-bindi	hypothetical prote	probable protein d	protein disulfide-	endoplasmic reticu

ALIGNMENTS

RESULT 1 JC2291

QY 291 DSLEVNIPQDANVVFKRAEEGVPVEFLVLHDVDLIISHVENNMHIEEIQEDEDNDM 346	Qy 246 TVHLQLGLPLVFIVSQQATYEADRRTAEWVAWRLLG-KAGVLLLLR 290 :: : :: ::	Qy 186 EDVEYAHLYFFHCKLVLDLTQQCRRTLMEQPLTTLNIHLFIKTMKAPLLTEVAEDPQQVS 245 :	Qy 126 LEDLQNIENALKGKANIIFSYVRAIGIPEHRAVMEAGFVYGTTYQFVLTTEIALLESIGS 185 : : : : : : : : : :	Qy 75 CGKEKDLMKAYLFKGNILLREFPTDTLFDVNAIVAHVLFALLFSEVKYITN 125	Qy 15 VIMCIFYMPTVNSLPELSPQKYFSTLQPGLEELNEAVRPLQDYGISVAKVNCVKEEISRY 74 ::: :	Query Match 4.5%; Score 185; DB 2; Length 505; Best Local Similarity 21.9%; Pred. No. 0.00023; Matches 112; Conservative 79; Mismatches 213; Indels 108; Gaps 22;	F;1-20/Domain: signal sequence #status predicted <sig> F;21-505/Product: protein disulfide-isomerase #status predicted <mat> F;29-112/Domain: thioredoxin homology <tx1> F;363-450/Domain: thioredoxin homology <tx2> F;105/Binding site: carbohydrate (Asn) (covalent) #status predicted</tx2></tx1></mat></sig>	A; Molecule type: protein A; Molecule type: protein A; Residues: 21-46;55-66;77-110;115-124;171-187;207-212;330-339;353-374;395-404;416-43 C; Comment: This enzyme catalyzes thiol-protein-disulfide interchange in vitro, with v C; Superfamily: protein disulfide-isomerase; thioredoxin homology C; Keywords: qlycoprotein; intramolecular oxidoreductase; isomerase	A; Molecule type: mRNA A; Molecule type: mRNA A;Residues: 1-505 <kaj> A;Cross-references: GB:S74296; NID:g712822; PIDN:AAC60578.1; PID:g712823 A;Accession: PC2200</kaj>	R;Kajino, T.; Sarai, K.; Imaeda, T.; Idekoba, C.; Asami, O.; Yamada, Y.; Hirai, M.; U Biosci. Biotechnol. Biochem. 58, 1424-1429, 1994 A;Title: Molecular cloning of a fungal cDNA encoding protein disulfide isomerase. A;Reference number: JC2291; MUID:94369094; PMID:7765273	UC2291 DC2291 protein disulfide-isomerase (EC 5.3.4.1) precursor - Humicola insolens C;Species: Humicola insolens C;Date: 28-Oct-1994 #sequence_revision 28-Oct-1994 #text_change 28-May-1999 C;Accession: JC2291; PC2200

```
A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-546 <STO>
A;Cross-references: GB:Al
C;Genetics:
A;Gene: F19K6.17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        R;Theologis, A.; Ecker, J.R.; Palm, C.J.; Federspiel, N.A.; Kaul, S.; White, O.; Alonso, Chin, C.W.; Chung, M.K.; Conn, L.; Conway, A.B.; Conway, A.R.; Creasy, T.H.; Dewar, K.; ansen, N.F.; Hughes, B.; Hulzar, L.

Nature 408, 816-820, 2000
A:Authors: Hunter, J.L.; Jenkins, J.; Johnson-Hopson, C.; Khan, S.; Khaykin, E.; Kim, C. A.; Lt., J.H.; Li, Y.; Lin, X.; Liu, S.X.; Liu, Z.A.; Luros, J.S.; Maiti, R.; Marziali, Rizzo, M.; Rooney, T.; Rowley, D.; Sakano, H.

Rizzo, M.; Rooney, T.; Rowley, D.; Sakano, H.

A;Authors: Salzberg, S.L.; Schwartz, J.R.; Shinn, P.; Southwick, A.M.; Sun, H.; Tallon, Ker, M.; Wu, D.; Yu, G.; Fraser, C.M.; Venter, J.C.; Davis, R.W.

A;Reference and analysis of chromosome 1 of the plant Arabidopsis.

A;Reference number: A86141; MUID:21016719; PMID:11130712
                                                                                                                                                                                                                                                                                                                В
                              밁
                                                                      Š
                                                                                                                        В
                                                                                                                                                                   Q
                                                                                                                                                                                                                   ДĎ
                                                                                                                                                                                                                                                                   Q
                                                                                                                                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                                                                                                                                                                                     Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ф
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       hypothetical protein F19K6.17 [imported] - Arabidopsis thaliana C:Species: Arabidopsis thaliana (mouse-ear cress) C:Date: 02-Mar-2001 #sequence_revision 02-Mar-2001 #text_change 31-Mar-2001 C:Date: 05-Mar-2001 #text_change 31-Mar-2001 C:Accession: F96562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Map position: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local S
Matches 111
                              353
                                                                                                                           304
                                                                                                                                                                                                                     244
                                                                                                                                                                                                                                                                          529
                                                                                                                                                                                                                                                                                                                     193
                                                                                                                                                                                                                                                                                                                                                                     488
                                                                                                                                                                                                                                                                                                                                                                                                                       134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               317 LVLHDVDLIISHVENNMHIEEIQEDEDNDME----GPDIDVQDD-----EVAETVFRDRKR 368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local Similarity
                              PFLILFGIEAGNKTVVAAFDNNLNSKYLLESDPSPNSIEEFCSGLAHGTVSRYYRSEPVP
                                                                        PLLILFSDGTVNPQYKKAILTLVKQKYLDSFTPCWLNLKN--TPVGRGILRAYF--DPLP 668
                                                                                                                        SSPVKLQVMLFSKADDFQKLAQPL----EDIARKFKSKLMFIYVDITNEN-----LAM
                                                                                                                                                                                                                        KLLFPDLKSNNVFIGLVKPEAERYTVYDGSYKMEKILEFLGSNKFPLFTKLTETNTVWVY 303
                                                                                                                                                                                                                                                                                                                     VDEAPRFL--DKYHTF-----VLGLFEKFEGSEHNEFVKAAKSDDEIQFIETRDSDVA 243
                                                                                                                                                                                                                                                                                                                                                                                                                     KIDGDRYSKIASELEIKGFPTLLLFVNGTS-LTYNGGSSAEDIVIWVQKKTGAPIITLNT 192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                RINCADWSDVCTKONVTEFPIIKMYKKGENPVSYAGMLGTKDLLKFIQLNRISYPVNITS 487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KLPLELTVELTEETFNATVMASDSIVLFYAGWQAVSMAFLQSYIDVAVKLKGT-STMLLT 427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LILLSFTIIIAYSSPDSNVESNEPGFDSDLDQLLAVDEQLQEDRPEQQSEAETV--SKAQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SGSRTVEDLIKFIAENG-KYKAAIS--EDAEE 476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGMLGTKDLLKFIQLNRISYPVNITSIQEAEE 493
                                                                                                                                                         --AASLPALLLARHTEGKIESIPLASTHAQDIVQIITDALLEMFPEITVENLPSYFRLQK 612
                                                                                                                                                                                                                                                                     -----AGNYLKGY------VITGIYSEEDVL--LLSTKY-------
                                                                                                                                                                                                                                                                                                                                                                     IQEAEEYLSGELYKDLILYSSVSVLGLF-----SPTMKTAKED----FSE-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RIVLELNGDYTKRVIDGNEFV---MVLGYAPWCARSAELMPRFAEAATALKEIGSSVLMA 133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LAPKYEELGALYAKSEFKDRVVIAKVD-ATANDV--PDEIQGFPTIKLYPAGAKGQPVTY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FLQSYIDVA----VKLKGTSTMLLTRINCADWSDVCTKQNVTEFPIIKMYKKGE---NPVSY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EGPDIDVQDDEVAETVFRDRKRKLPLELTVELTEETFNATVMASDSIVLFYAGWQAVSMA 406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DKFPAFAIQEVAKNQKFPFDQEKE-ITFEAIKAFVDDFVAGKIEPSIKSEPIPEKQ----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 111; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GB:AE005173; NID:g10645454; PIDN:AAG21570.1; GSPDB:GN00141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4.4%; Score 182; DB 2;
20.9%; Pred. No. 0.00041;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          93; Mismatches 180;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 546;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels 148;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                        352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   390
                                                                                                                                                                                                                                                                     554
                                                                                                                                                                                                                                                                                                                                                                     528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 25;
                         RESULT 4
S34275
protein disulfide-isomerase homolog precursor - fluke (Schistosoma mansoni)
```

	626 QYKKAILTLVKQKYLDSFTPCWLNLKNTPVGRGILRAYFDPLPPLPLLVLVNL 678 : : : : : : :	Db Dy Oy Db
	TMKTAKEDFSEAGNYLKGYVITGIYSEE	Оу Оу Оу
	399 GWQAVSMAFLQSYIDVAVKLKGT-STMLLTRINCADWSDVCTKQNVTEFPIIKMYKKGEN 457 200 PWCGHCKKLAPEYEKAAQKLKAQGSKVKLGKVDATIEKDLGTKYGVSGYPTMKIIRNGRR 279 458 PVSYAGMLGTKDLLKFIQLNRISYPVNITSIQEAEEYLSGELYKDLILVSSVSVLGLFSP 517	Oy Oy Db
17;	ery Match 4.2%; Score 172.5; DB 2; Length 664; st Local Similarity 19.4%; Pred. No. 0.0024; tches 87; Conservative 90; Mismatches 175; Indels 97; Gaps 345 DMEGP-DIDVQDDEVAETVERDRKRKLPLELTVELTEETFNATVMASDSIVL-FYA 398 345 Lili	Que Bes Mat Qy
	Status: preliminary Molecule type: DNA Residues: 1-664 <fav> Residues: 1-664 <fav> Coross references: EMBL:L15188; NID:g289640; PIDN:AAA27952.1; PID:g289643 Genetics: Introns: 43/2; 110/2; 631/3 Superfamily: protein disulfide-isomerase; thioredoxin homology Superfamily: protein disulfide-isomerase; isomerase 90-170/Domain: thioredoxin homology <tx1> 201-285/Domain: thioredoxin homology <tx3> 553-640/Domain: thioredoxin homology <tx3></tx3></tx3></tx1></fav></fav>	A; Store A; Store A; Store A; Ree A; Crare C; Store C; St
9	5844756 \$784756 \$Probable protein disulfide-isomerase (EC 5.3.4.1) - Caenorhabditis elegans N;Alternate names: C14B9.2 protein C;Species: Caenorhabditis elegans C;Species: Caenorhabditis elegans C;Date: 14-Sep-1994 #sequence_revision 12-May-1995 #text_change 16-Jul-199 C;Accession: S44756 R;Favello, A.D. Submitted to the EMBL Data Library, May 1993 A;Description: Sequence of the C. elegans cosmid C14B9. A;Reference number: S44617	S4475 proba N; Alt C; Spe C; Dat C; Acc R; Fav submi A; Dess A; Refi
	709 LENHITILPAQEWKPPLPAYDFLSMIDAATSQRGTRKVPKCMKETDVQENDK 760 : : : : : : : : :	Qy Db RESUL
. .	669 PLPLLVLVNLHSGGQVFAFPSDQAIIEENLVLWLKKLEA	Qy Db

```
protein disulfide-isomerase (EC 5.3.4.1) ER60 precursor - human N; Alternate names: ER-60 proteinase C:Species: Homo sapiens (man) C;Date: 25-Nov-1997 #sequence_revision 25-Nov-1997 #text_change 21-Jan-2000 C;Accession: JC5704; G02888 R; Urade, R.; Oda, T.; Ito, H.; Moriyama, T.; Utsumi, S.; Kito, M. J. Biochem. 122, 843-842, 1997 A;Title: Functions of characteristic Cys-Gly-His-Cys (CGHC) and Gln-Glu-Asp-Leu A;Reference number: JC5704; MUID:98060510; PMID:9399589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Cross-references: EMBL:Z22934
C;Superfamily: protein disulfide-isomerase; thioredoxin homology
C;Keywords: duplication; endoplasmic reticulum; redox-active disulfide
F:1-15/Domain: signal sequence #status predicted <SIG>
F;31-115/Domain: thioredoxin homology <TX1>
F;369-452/Domain: thioredoxin homology <TX2>
F;479-482/Region: endoplasmic reticulum retention signal
F;52-55,391-394/Disulfide bonds: redox-active #status predicted
                                                                                                                                                                                                             RESULT 5
JC5704
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C;Species: Schistosoma mansoni
C;Date: 22-Nov-1993 #sequence_
C;Accession: S34275
R;Finken, M.; Sobek, A.; Symmo
submitted to the EMBL Data Lib
A; Reference number: A; Accession: JC5704
                                                                                                                                                                                                                                                                                                Ъ
                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                              멍
                                                                                                                                                                                                                                                                                                                                                                                                                   δÕ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ф
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δĀ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     F;125-142/Disulfide bonds: #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Molecule type: DNA
A; Residues: 1-482 <FIN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Reference number: S34275
A; Accession: S34275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              142
                                                                                                                                                                                                                                                                                                420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    43
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VLVEFYAPWCGHCKALAP-----
                                                                                                                                                                                                                                                                                                                                      VCTKQ----NVTEFPIIKMY-KKGENPVSYAGMLGTKDLLKFIQ
                                                                                                                                                                                                                                                                                                                                                                                VGKNYNDVVKDKSKDVFVKLYAPWCGHCKALAPVWDELGETFKNSDTVIAK--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    YRIIELGEETTKYKPDTNDYSVSAMSDFVQRTI--DGKVK-PFLMSEEIPSDQTGAVKVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEFSQ-----KTAGVVFGSPIQKHIVFFLSKSTDHSDLVDKLTE--VARQFKGKLHVIYV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TEVAEDPQQVSTVHLQLGLP----LVFIVSQQATYE--ADRRTAEWVAWRLLGKAGVLLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TEIALLESIGSEDVEYAHLYFFHCKLVLDLTQQCRRTLMEQPLTTLNIHLFIKTMKAPLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CKQFID----KANIAILGFIKDTDSLDLADFEKVADELDDAGFAIANSSEILTEYGITQT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LQNIENALKGKANI-IFSYVR---AIGIPEHRAVM----EAGFVYG-----TTYQFVLT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LKHG-EKGYPTLKFFR-----NEQPIDFLGERDSDAIVN---WCLRKSKPSVEYIDSLDS 141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RYCGKEKDLMKAYLFKGNILLREFPTDTL--FDVNAIVAHVLFALLFSE--VKYITNLED 128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       IMCIFYMPTVNSLPELSPQKYFSTLQPGLEELNEAVRPLQDYG--ISVAKVNC-VKEEIS
                                                                                                                                                                                                                                                                                                ATVNEVEDLKVTSFPTLKFYPKNSEEVIDYTGDRSFEALKKFVE
                                                                                                                                                                                                                                                                                                                                                                                                                          TEETFNATV--MASDSIVLFYAGWQAVSMAFLQSYIDVAVKLKGTSTMLLTRINCADWSD 436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LRDSLEVNIPQDANVVFKRAEEGVPVEFLVLHDVDLIISHVENNMHIEE-------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                IQEDEDNDMEGPD-----IDVQDDEVAETVFRDRKRKLPLELTVE------L
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 #sequence_revision 26-May-1994 #text_change 14-Aug-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Symmons, P.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4.1%;
22.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Library, June
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     70;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 169.5; DB Pred. No. 0.0023;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Kunz, W.
une 1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -EYSEAAKKLKEKGSLIKLAKVDATVEEELA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DVD----VENNLRVLEFFGLSKNDAPT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ---GGTLENLKHFIQVESVPLV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 482;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels 167;
                                                                                                                                                                                                                                                                                                                                                                                    Ė
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               90
                                                                                                                                                                                                                                                                                                                                                                                    419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   29;
                                       (QEDL)
```

```
A;Reference number: S68279; MUID:96257756; PMID:8687406 A;Accession: S68279
                                                                                                                                                                                                                                                                                                                      A;Accession: 5,000
A;Molecule type: protein
A;
C;Superfamily: protein disulfide-isomerase; thioredoxin homology C;Keywords: endoplasmic reticulum; intramolecular oxidoreductase
                                                                                                                                                                                                                                                                     R;Koivunen, P.; Helaakoski, T.; Ann
Biochem. J. 316, 599-605, 1996
A;Title: ERp60 does not substitute
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Reference number: S68363; MUID: 96063616; PMID: 7487104 A; Accession: S68363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      C;Species: Homo sapiens (man)
C;Date: 15-Feb-1997 #sequence_revision 13-Mar-1997 #text_change 16-Jul-1999
C;Accession: S68363; S78215; S68279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ф
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  F;1-24/Domain: signal sequence #status predi
F;57-60,406-409/Region: CGHC motif
F;384-470/Domain: thioredoxin homology <TXN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C;Comment: This enzyme degrades endoplasmic reticulum-resident proteins such C;Superfamily: protein disulfide-isomerase; thioredoxin homology C;Keywords: endoplasmic reticulum; hydrolase; intramolecular oxidoreductase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    submitted to GenBank, February A; Reference number: H01799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Molecule type: mRNA
A; Residues: 1-505 < UR
                                                                             A; Molecule type: mRNA
A; Residues: 1-505 < KOI>
                                                                                                                                                           A; Status: not compared with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Cross-references: EMBL: U42068; NID: g1147738; PIDN: AAC50331.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Molecule type: mRNA
A; Residues: 1-505 <BOU>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Title: cDNA cloning and Baculovirus expression of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             R;Bourdi, M.; Demady, D.; Martin, J.L.; Jabbour, S.K.; Martin, B.M.; George, Arch. Biochem. Biophys. 323, 397-403, 1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             protein disulfide-isomerase (EC 5.3.4.1) ER60 precursor -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              F;502-505/Region: QEDL motif
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Cross-references: GB:D83485; NID:g1208426; PIDN:BAA11928.1; PID:g1208427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Molecule type: mRNA
A; Residues: 1-505 < KIT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Status: preliminary; translated from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Reference number: A; Accession: G02888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      R;Kito,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Cross · references: DDBJ: D83485; NID: g1208426; PIDN: BAA11928.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             432 ADWSDVCTKQNVTEFPIIKMYKKGENPVSYAGMLGTKDLLKFIQLNRISYPVNITSIQEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        376 VELTEETFNATVMASDS----IVLFYAGWQAVSMAFLQSYIDVAVKLKGTSTMLLTRINC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ---LIQGKDLLIAYYDVDYEKNAKGSNYWRNRVMMVAKKFLDA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SYFRLQ-KPLLILFSD-----GTVNPQYKKAILTLVKQKYLDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TKYAASLPALLLAR--HTEGKIESIPLASTHAQ----DIVQIITDALLEMFPEITVENLP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            E-----FKKFISDKDASIVGFFDDSFSEAHSEFLKAASNLRD---NYRFAHTNVESLV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TANTNTCNKYGVSGYPTLKIFRDGEEAGAYDGPRTADGIVS--HLKKQAGPASVPLRTEE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LELTDDNFESRISDTGSAGLMLVEFFAPWCGHCKRLAPEYEAAATRLKG--IVPLAKVDC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NEYDDNGEGIILFRPSHLTNKFEDKTVAYTEQKMTSGKIKKFIQENIFGICPHMTEDNKD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EEYLSGELYKDLILYSSVSVLGLFSPTMKTAKEDFSEAGNYLKGYVITGIYSEEDVLLLS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   <URA>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4.1%;
22.6%;
                                                                                                                                                       conceptual
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  59;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 169.5; DB Pred. No. 0.0024;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GB/EMBL/DDBJ
                                                                                                                                                           translation
                                                                                                                                                                                                                                                                                                                                                           P.; Veijola, J.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  127;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    <SIG>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        human
                                                                                                                                                                                                                                                                                                                                                           Raeisaenen, S.; Pihlajaniem
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 human
                                                                                                                                                                                                                                                                              isomerase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        liver endoplasmic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PID:g1147739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PID:g1208427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      33;
                                                                                                                                                                                                                                                                              as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                              the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               85
                                                                                                                                                                                                                                                                              beta-subun
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      J.W.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         isomeras
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            retic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   prote
```

Po

F;1-24/Domain: signal sequence

#status

predicted

intramolecular oxidoreductase;

isomerase;

redox-ac

```
Qy
                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                            Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Cross-references: EMBL:X89449; NID:g899148; PIDN:CAA61619.1; PID:g899149 C;Superfamily: protein disulfide-isomerase; thioredoxin homology C;Keywords: intramolecular oxidoreductase; isomerase F;33-116/Domain: thioredoxin homology <TXl>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                protein disulfide-isomerase (EC 5.3.4.1) - Aspergillus niger C:Species: Aspergillus niger C:Species: Aspergillus niger C:Date: 13-Jan-1996 #sequence_revision 13-Mar-1997 #text_change 16-Jul-1999 C:Accession: S57942 R:Malpricht, S. submitted to the EMBL Data Library, July 1995 submitted to the EMBL Data Library, July 1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 7
S57942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          F:25-505/Product: protein disulfide-isomerase ER60 #status predicted <MAT> F:33-118/Domain: thioredoxin homology <TX1> F:384-470/Domain: thioredoxin homology <TX2> F:502-505/Region: endoplasmic reticulum retention signal F:57-60,406-409/Disulfide bonds: redox-active #status predicted
                                       δÃ
                                                                                          В
                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                     ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Molecule type: mRNA
A; Residues: 1-515 <MAL>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Reference number: A; Accession: S57942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Description: Heterologe expression in Aspergillus A; Reference number: S57942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        57-60,406-409/Disulfide bonds: redox-active #status predicted
                                                                                                                                                                                   142
                                                                                                                                                                                                                        126 LEDLQNIENALKGKANIIFSYVRAIGIPEHRAVMEAGFVYGTTYQFVLTTEIALLESIGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             144
240 ETYSG-YIGAGVPLAYIFA-ETKEEREKYTEDFKPIAQKHKGAINIATIDAKMFGAHAGN
                                                                                             196
                                                                                                                                       186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          606 SYFRLQ-KPLLILFSD-----GTVNPQYKKAILTLVKQKYLDS 642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             432 ADWSDVCTKONVTEFPIIKMYKKGENPVSYAGMLGTKDLLKFIQLNRISYPVNITSIQEA 491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   376 VELTEETFNATVMASDS----IVLFYAGWQAVSMAFLQSYIDVAVKLKGTSTMLLTRINC 431
                                            242 QQVSTVHLQLGLPLVFIVSQQATYEADRRTAEW-------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    194 NEYDDNGEGIILFRPSHLTNKFEDKTVAYTEQKMTSGKIKKFIQENIFGICPHMTEDNKD 253
                                                                                                                                                                                                                                                                            88
                                                                                                                                                                                                                                                                                                                      75
                                                                                                                                                                                                                                                                                                                                                                44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   86 TANTITCHKYGVSGYPTLKIFRDGEEAGAYDGPRTADGIVS--HLKKQAGPASVPLRTEE
                                                                                                                                                                                                                                                                                                                                                                                                          15 VIMCIFYMPTVNSLPELSPQKYFSTLQPGLEELNEAVRPLQDYGISVAKVNCVKEEISRY 74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       28 LELTDDNFESRISDTGSAGLMLVEFFAPWCGHCKRLAPEYEAAATRLKG--IVPLAKVDC
                                                                                                                                                                                                                                                                                                                 CGKEKDLMKAYLFKGNILLREF-----PTDTLFDVNAIVAHVLFALL--FSEVKYITN 125
                                                                                                                                                                                                                                                                                                                                                                LVLAEFFAPWCGHCKALAP-KY------EEAATELKAKNIPLVKVDCTAEE----
                                                                                                                                                                                                                                                                       ----DLCRSQGVEGYPTLKIFRGVDSSKPYQGARQTESIVSYMIKQSLPAVSSVNE-EN
                                                                                        EQPSIV-LYKDFDEKKAVYDGEIEQEA-----IHSWVKSASTPLVGEIG--P
                                                                                                                                  EDVEYAHLY -- FFHCKLVLD -- LTQQCRRTLMEQPLTTLNIHLFIKTMKAPLLTEVAEDP
                                                                                                                                                                                 LEEIKTMDKI-----VVIGYIPSDDQETYQAFEKYAESQRDNYLFAATDDAAIAKSEGV 195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TKYAASLPALLLAR--HTEGKIESIPLASTHAQ----DIVQIITDALLEMFPEITVENLP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             E-----FKKFISDKDASIVGFFDDSFSEAHSEFLKAASNLRD---NYRFAHTNVESLV 193
                                                                                                                                                                                                                                                                                                                                                                                                                                                      111;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ---LIQGKDLLIAYYDVDYEKNAKGSNYWRNRVMMVAKKFLDA 293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EEYLSGELYKDLILYSSVSVLGLFSPTMKTAKEDFSEAGNYLKGYVITGIYSEEDVLLLS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                      4.1%; Scilarity 20.6%; Pr
Conservative 89;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4.1%; Score 169.5; DB 2; 22.6%; Pred. No. 0.0024; tive 59; Mismatches 127;
                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 2; Length 505;
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels 145;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 515;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                            -VAWRLLG-KAGV 285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  33
;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
  297
                                                                                                                                    241
                                                                                                                                                                                                                           185
                                                                                                                                                                                                                                                                                                                                                                87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   143
                                                                                                                                                                                                                                                                                                                                                                                                                                                        27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  10;
```

INDIGGDDIVODDEVARIVERDERKRKLPILLTVELTEETFRANTWASDSIVL-FY 397	RESULT 9 S55507	Qy 610 LQ Db 240 -G	Qy 552 TK Db 194 NK	Qy 492 EE : Db 146 EK	QY 432 AL Db 86 TA	Qy 376 VE : Db 28 LE	Query Match Best Local Matches 6	C;Superfamily: C;Keywords: duj F;1-24/Domain: F;25-488/Produ F;33-118/Domai F;33-128/Jomai F;367-453/Domai F;485-488/Regit F;57-60,389-39;	Molecule to Residues: Cross-refe Experiment Comment: F	R; Hirano, N. R; Hirano, N. Biochem. Bio A; Title: Mol A; Reference A: Accession:	RESULT 8 JC2385 protein disu N;Alternate C;Species: E C;Date: 10-5	Qy 444 TE Db 433 TG	Qy 398 Ac Db 386 AE	Qy 340 EI L Db 355 ES	Db 298 LN
ë o c ≺		LLILESDGTVNPQYKKAILTLVKQKYLDS : : : : : : LLIAYYDVDYEKNAKGSNYWRNRVMMVAKKFLDA	-HTEGKIESIPLASTHAQDIVQIITDALLEMFPEITVENLPSYFR 6	EYLSGELYKDLILYSSVSVLGLFSPTMKTAKEDFSEAGNYLKGYVITGIYSEEDVLLLS	IIKMYKKGENPVSYAGMLGTKDLLKFIQLNRISYPVNITSIQEA 	IVLEYAGWQAVSMAFLQSYIDVAVKLKGTSTMLLTRINC 4 	DB 1; Length 488; 0033; 121; Indels 40; Gaps 9	protein disulfide isomerase; thioredoxin homology plication; endoplasmic reticulum; intramolecular oxidoreductase; i signal sequence #status predicted <sig> ct: ER60 protease #status predicted <mat> in: thioredoxin homology <tx1> in: thioredoxin homology <tx2> cn: endoplasmic reticulum retention signal 2/Disulfide bonds; redox-active #status predicted</tx2></tx1></mat></sig>	e: mRNA e: mRNA 488 <hir> nces: DDBJ:D16234 source: thymus 0 may be part of a complex capable of catalyzing cleavage of itself, s enzyme has two Trp-Cys-Gly-His-Cys-Lys motifs.</hir>	aakai, R.; Tanaka, T.; Nishida, J.; Yazaki, 382, 1994 ization of a cDNA for bovine phospholipase 22; PMID:7945384) ER60 precursor - bovine le) 10-Sep-1999 #text_change 10-Sep-19	FPIIKMYKKGENPVSYAGMLGTKDLLKFIQLNRISYPVNITSIQEAEEYLSGEL :::	VAVKLKGTSTMLLTRINCADWSDVCTKQNV:	IDMEGPDIDVQDDEVAETVFRDRKRKLPLELTVELTEETFNATVMASDSIVLFY	LILLERDSLEVNIEQU''''ANVVERNALE'''GVEVEELVIHIVDILISORVEPSIKSEPVP 354

protein disulfide-isomerase (EC

5.3.4.1) ER60 precursor

```
RESULT 10
S63994
QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Вр
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δã
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      F;384-470/Domain: thioredoxin homology <TX2> F;502-505/Region: endoplasmic reticulum retention signal F;57-60,406-409/Disulfide bonds: redox-active #status pr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            C;Keywords: duplication; endoplasmic reticulum; intramolecular oxidoreductase; isomerase F;1-24/Domain: signal sequence #status predicted <SIG>F;25-488/Product: ER60 protease #status predicted <MAT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           N;Alternate names: ER60 proteinase
C;Species: Homo sapiens (man)
C;Date: 10-Sep-1999 #sequence_revis
C;Accession: S55507
                                                                                                                                                                                      A; Molecule type: mRNA
A; Residues: 1-505 <HIR>
                                                                                                                                                                                                                             A; Status: preliminary; not
                                                                                                                                                                                                                                                   A; Reference number: A; Accession: S63994
                                                                                                                                                                                                                                                                                                 9
                                                                                                                                                                                                                                                                                                                                   R;Hirano, N.; Shibasaki, F.; Sakai, R.; Tanaka, T.; Nishida, Eur. J. Blochem. 234, 336–342, 1995
                                                                                                                                                                                                                                                                                                                                                                               C; Date: 20-Jul-1996
C; Accession: S63994
                                                                                                                                                                                                                                                                                                                                                                                            protein disulfide-isomerase (EC 5.3.4.1) ER60 precursor - human
N;Alternate names: glucose-regulated protein GRP58
C;Species: Homo sapiens (man)
C;Date: 20-Jul-1996 #sequence_revision 13-Mar-1997 #text_change 13-Jun-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          日
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         F;33-118/Domain: thioredoxin homology <TX1>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Cross-references: EMBL:Z49835; NID:g860985; PIDN:CAA89996.1; PID:g860986 C;Comment: ER60 may be part of a complex capable of catalyzing cleavage of C;Superfamily: protein disulfide-isomerase; thioredoxin homology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Molecule type: mRNA
A; Residues: 1-505 < CHA>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Reference number:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Description: Cloning, ex
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            submitted to the EMBL Data Library, June A;Description: Cloning, expression and ge
                                                                                                                                                                                                                                                                                                                    A;Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Accession: S55507
                                                                                                                         33-118/Domain: thioredoxin homology <TX1>
                                                                                                                                                                  Superfamily: protein disulfide-isomerase; thioredoxin homology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Charnock-Jones,
                                                                                                                                               Keywords: endoplasmic reticulum; intramolecular oxidoreductase;
                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      552
  376 VELTEETFNATVMASDS----IVLFYAGWQAVSMAFLQSYIDVAVKLKGTSTMLLTRINC 431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   376 VELTEETFNATVWASDS----IVLFYAGWQAVSMAFLQSYIDVAVKLKGTSTMLLTRINC 431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             28
                                                            Local
                                                                                                                                                                                                                                                                                                                Molecular cloning
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ---LIQGKDLLIAYYDVDYEKNAKGSNYWRNRVMMVAKKFLDA 293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SYFRLQ-KPLLILFSD-----GTVNPQYKKAILTLVKQKYLDS 642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NEYDDNGEGIILFRPSHLTNKFEDKTVAYTEPKMTSGKIKKFIQGNIFGICPHMTEDNKD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TKYAASLPALLLAR--HTEGKIESIPLASTHAQ----DIVQIITDALLEMFPEITVENLP 605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EEYLSGELYKDLILYSSVSVLGLFSPTMKTAKEDFSEAGNYLKGYVITGIYSEEDVLLLS 551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TANTITCHKYGVSGYPTLKIFRDGEEAGAYDGPRTADGIVS--HLKKQAGPASVPLRTEE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADWSDVCTKQNVTEFPIIKMYKKGENPVSYAGMLGTKDLLKFIQLNRISYPVNITSIQEA 491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LELTDDNFESRISDTGSAGLMLVEFFAPWCGHCKRLAPEYEAAATRLKG--IVPLAKVDC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -FKKFISDKDASIVGFFDDSFSEAHSEFLKAASNLRD---NYRFAHTNVESLV
                                                                                                                                                                                                                                                                         $63994; MUID:96096758;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               #sequence_revision
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4.0%;
                                                            4.0%;
                                                                                                                                                                                                                               compared with conceptual translation
                                                                                                                                                                                                                                                                                                              of the human glucose-regulated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            58;
                                             59;
                                         Score 166.5;
Pred. No. 0.00
59; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 166.5;
Pred. No. 0.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            genomic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               10-Sep-1999 #text_change 10-Sep-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1995
                                                                                                                                                                                                                                                                         PMID:8529662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0.0038;
                                                               0038;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            organization
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 1; Length 505;
                                         127;
                                                                                DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            128;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            predicted
                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                           Indels
                                                                                                                                                                                                                                                                                                                  protein ERp57/GRP58,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ^{\rm of}
                                                                                                                                                                                                                                                                                                                                                         J.; Yazaki, Y.; Takenawa,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            human placental protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            33;
                                         33;
                                                                                                                                               isomerase;
                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             itself,
                                           10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10;
                                                                                                                                               redox-activ
                                                                                                                                                                                                                                                                                                                  a thiol
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ъ
                                                                                                                                               A; Reference number: A; Accession: S40913
                                                                                                                                                                  submitted to the EMBL Data Library, April 1990 A; Reference number: S40913
                                                                                                                                                                                                                                                                                              A; Accession:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SSYBSI
```

```
909
                                                                                                                                                                                                                                                                           492
                                                                                                                                                                                                                                                                                                                                                                                        432
                                                                                                          194
                                                                                                                                                             552 TKYAASLPALLLAR--HTEGKIESIPLASTHAQ----DIVQIITDALLEMFPEITVENLP 605
                                                                                                                                                                                                                    144
                                                                                                                                                                                                                                                                                                                                 86
                                                                                                                                                                                                                                                                                                                                                                                                                                              28
---LIQGKDLLIAYYDVDYEKDAKGSNYWRNRVMMVAKKFLDA
                                                SYFRLQ-KPLLILFSD-----GTVNPQYKKAILTLVKQKYLDS
                                                                                                          NEYDDNGEGIILFRPSHLTNKFEYKTVAYTEQKMTSGKIKKFIQENIFGICPHMTEDNKD
                                                                                                                                                                                                                                                                           EEYLSGELYKDLILYSSVSVLGLFSPTMKTAKEDFSEAGNYLKGYVITGIYSEEDVLLLS
                                                                                                                                                                                                                                                                                                                                 TANTNTCNKYGVSGYPTLKIFRDGEEAGAYDGPRTADGIVS--HLKKQAGPASVPLRTEE
                                                                                                                                                                                                                                                                                                                                                                                  ADWSDVCTKQNVTEFPIIKMYKKGENPVSYAGMLGTKDLLKFIQLNRISYPVNITSIQEA 491
                                                                                                                                                                                                                                                                                                                                                                                                                                           LELTDDNFESRISDTGSAGLMLVEFFAPWCGHCKRLAPEYEAAATRLKG--IVPLAKVDC
                                                                                                                                                                                                                       ---FKKFISDKDASIVGFFDDSFSEAHSEFLKAASNLRD---NYRFAHTNVESLV
                                                   642
                                                                                                                                                                                                                                                                              551
                                                                                                                                                                                                                                                                                                                                 143
                                                                                                                                                                                                                                                                                                                                                                                                                                              85
```

A; Molecule type: protein
A; Residues: 99-112; 'X', 185-193; 211-217; 'X', 233-237, 'X', 239; 284-286, 'X', 288-298; 309-31
R; LaMantia, M.; Miura, T.; Tachikawa, H.; Kaplan, H.A.; Lennarz, W.J.; Mizunaga, T.
Proc. Natl. Acad. Sci. U.S.A. 88, 4453-4457, 1991 A;Title: Molecular structure of a yeast gene, A;Reference number: JX0182; MUID:92105067; PM. A;Accession: JX0182 R;Tachikawa, H.; Miura, T.; Katakura, Y.; Mizunaga, J. Biochem. 110, 306-313, 1991 C;Date: 30-Jun-1992 #sequence_revision 30-Jun-1992 #text_change 21-Jul-2000 C;Accession: JX0182; PS0224; A39376; S15050; JS0634; S40913; A41713; S19372; A;Cross-references: GB:D00842; A;Accession: PS0224 A; Molecule type: DNA A; Residues: 1-522 < TAC> N;Alternate names: protein YCL043c; protein C;Species: Saccharomyces cerevisiae protein disulfide-isomerase (EC NID: g218506; 5.3.4.1) precursor - yeast (Saccharomyces cerevisiae) 43c; protein YCL313; S-S rearrangase; thioredoxin-rela PMID:1761527 PIDN: BAA00723.1; PID:g218507 protein disulfide isomer

Yeast 7, A; Title: A;Title: Glycosylation site binding protein and protein disulfide isomerase are ident A;Reference number: A39376; MUID:91239586; PMID:1840696 A;Accession: A39376 A;Cross-references: GB:M62815 R;Scherens, B.; Dubois, E.; M A; Accession: S15050 A; Reference number: S15050; A; Molecule type: DNA A; Residues: 1-522 <LAM> Determination of the sequence of the yeast YCL313 gene nce number: S15050; MUID:91289690; PMID:2063627 185-193, 1991 Messenguy, localized 9 chromoso

A; Molecule type: DNA A; Residues: 1-522 <SCH> Gene 108, 81-89, 1991

A; Title: Protein disulfide isomerase is essential for viability A; Reference number: JS0634; MUID:92104510; PMID:1761235 A;Cross-references: EMBL:X57712; NID:g4801; PIDN:CAA40883.1; PID:g4802 R;Farquhar, R.; Honey, N.; Murant, S.J.; Bossier, P.; Schultz, L.; Mon JS0634 in Saccharomyces Montogomery,

D.; cere (F)

A;Molecule type: DNA A;Residues: 1-113,'R',115-505,'EADAEAEA',506-522 A;Cross-references: EMBL:X54535; NID:g4119; PIDN R; Kuentzel, Ξ.

NID: 94119; PIDN: CAA38402.1;

PID: 94120

<FAR>

J. Biol. Chem. 266, 2433 A; Molecule type: DNA
A; Residues: 1-82, V', 84-142, 'S', 144, 146-167, 'E', 169-225, 'V', 227-457, 'S', 459-505, 'EADA
A; Cross-references: EMBL: X52313; NID: 93948; PIDN: CAA36550.1; PID: 93949
A; Cross-references: EMBL: X52313; NID: 93948; PIDN: CAA36550.1; PID: 93949
A; Cross-references: EMBL: X52313; NID: 93948; PIDN: CAA36550.1; PID: 93949
A; Cross-references: EMBL: X52313; NID: 93948; PIDN: CAA36550.1; PID: 93949
A; Cross-references: EMBL: X52313; NID: 93948; PIDN: CAA36550.1; PID: 93949
A; Cross-references: EMBL: X52313; NID: 93948; PIDN: CAA36550.1; PID: 93949
A; Cross-references: EMBL: X52313; NID: 93948; PIDN: CAA36550.1; PID: 93949
A; Cross-references: EMBL: X52313; NID: 93948; PIDN: CAA36550.1; PID: 93949
A; Cross-references: EMBL: X52313; NID: 93948; PIDN: CAA36550.1; PID: 93949
A; Cross-references: EMBL: X52313; NID: 93948; PIDN: CAA36550.1; PID: 93949
A; Cross-references: EMBL: X52313; NID: 93948; PIDN: CAA36550.1; PID: 93949
A; Cross-references: EMBL: X52313; NID: 93948; PIDN: CAA36550.1; PID: 93949
A; Cross-references: EMBL: X52313; NID: 93948; PIDN: CAA36550.1; PID: 93949
A; Cross-references: EMBL: X52313; NID: 93948; PIDN: CAA36550.1; PID: 93949
A; Cross-references: EMBL: X52313; NID: 93948; PIDN: CAA36550.1; PID: 93949
A; Cross-references: EMBL: X52313; NID: 93948; PIDN: CAA36550.1; PID: 93949
A; Cross-references: EMBL: X52313; NID: 93948; PIDN: CAA36550.1; PID: 93949
A; Cross-references: EMBL: X52313; NID: 93948; PIDN: CAA36550.1; PID: 93949
A; Cross-references: EMBL: X52313; NID: 93948; PIDN: CAA36550.1; PID: 93949
A; Cross-references: EMBL: X52313; NID: 93949
A; Cross-references: E R;Guenther, R.; Braeuer, C.; Janetzky, J. Biol. Chem. 266, 24557-24563, 1991 В.; gene is essential PMID:1761554 for growth I.M.; Lehle, L.; and encodes

```
A;Title: The complete sequence of a 9,543 bp segment on the left arm of chromo A;Reference number: $25347; MUID:92397595; PMID:1523890
A;Reference number: $25349
A;Accession: $1-522 <SC2>
A;Cross-references: EMBL:X59720; EMBL:$43845; EMBL:$49180; EMBL:$58084; EMBL:$58084; EMBL:$61-640; EMBL:$58084; EMBL:$58084; EMBL:$58084; EMBL:$58084; EMBL:$58084; EMBL:$61-640; EMBL:$58084; EMBL:$58084; EMBL:$61-640; EMBL:$58084; EMBL:$58084; EMBL:$58084; EMBL:$58084; EMBL:$61-640; EMBL:$58084; EMBL:$58084; EMBL:$61-640; EMBL:$58084; EMBL:$5808
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Accession: A41713
A;Molecule type: DNA
A;Residues: 1-82; /V',84-142,'S',144,146-167,'E',169-225,'V',227-457,'S',459-505,'EADAEAH
A;Cross:references: GB:M/6982; NID:g173023; PIDN:AAA35169.1; PID:g173024
A;Cross:references: GB:M/6982; NID:g173023; PIDN:AAA35169.1; PID:g173024
A;Cross:reference number: S19367
A;Accession: S19372
A;Molecule type: DNA
A;Residues: 1-522 < DUB>
A;Cross:references: EMBL:X59720; NID:g1907116; PIDN:CAA42373.1; PID:g5320; GSPDB:GN0000
R:Scherens, B.; Messenguy, F.; Gigot, D.; Dubois, E.
protein disulfide-isomerase (EC 5.3.4.1) ER60 precunyalternate names: endoplasmic reticulum protein ERC; Species: Rattus norvegicus (Norway rat) C;Date: 31-Mar-1989 #sequence_revision 27-Jun-1994 C;Accession: A28807; A43050; A43051; A40095 R;Bennett, C.F.; Balcarek, J.M.; Varrichio, A.; Cro
                                                                                                                                                                                           A28807
                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                  B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δã
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                          RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                          646
                                                                                                                                                                                                                                                                                                                                                                                                                                      227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VKLKGTSTMLLTRINCADWSDVCTKQNVTEFPIIKMYKKGE--NPVSYAGMLGTKDLLKF 473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VAETVFRDRKRKLPLE-LTVELTEETFNATVMASDSIVL-FYAGWQAVSMAFLQSYIDVA 415
                                                                                                                                                                                                                                                                                                                                                                          CWLNL--KNTPVGRGIL
                                                                                                                                                                                                                                                                                                                                                                                                                                      -- DVFEKWLQVEALPYFGEI-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LLEMFPE-ITVENLPSYFRLQKPLLILFSDGTVNPQYKKAILTL-----VKQKYLDSFTP 645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NDYDFVSAENADDDFKLSTYLPSAMDEPVVYNGKKAD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KGYVITGIYSEEDVLLLSTKYAASL--PALLLARHTEGKIESIPLASTHAQDIVQIITDA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                --MIKQSQPA-VAVVADLPAYLANETEVTPVIVQSGKIDADFNATF-----YSMANKHF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ETLY-EKNITLAQIDCTENQDLCMEHNIPGFPSLKIFKNSDVNNSIDYEGPRTAEAIVQF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LASSVFAQQEAVAPEDSAVVKLATDSFNEYIQSHDLVLAEFFAPWCGHCKNMAPEYVKAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              66;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                  -RGLM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           67;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 154.5;
Pred. No. 0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                      DGSVFAQYVESGLPLGYLFYNDEEELEEYKP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .025;
                                                                                                                                                            precursor
         Crooke
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           126;
                                                                                                                                ERp60;
                                                                 #text_change
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                ER60
         ß
                                                                                                                                proteinase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   522;
                                                                    18-Jun-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           58;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         IADA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        533
                                                                                                                                                                                                                                                                                                                                                                                                                                      275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL: S93798;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    chromosome
                                                                                                                                hormone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               disulfide bonds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      intramolecular
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           15;
                                                                                                                                induced
```

```
A;Cross-references: GB:X12355; NID:g56904; PIDN:CAA30916.1; PID:g569 R;Martin, J.L.; Pumford, N.R.; LaRosa, A.C.; Martin, B.M.; Gonzaga, Biochem. Biophys. Res. Commun. 178, 679-685, 1991 A;Title: A metabolite of halothane covalently binds to an endoplasmi. A;Reference number: A43050; MUID:91315499; PMID:1650195 A;Accession: A43050
A;Molecule type: protein A;Reference number: A595-104;130-138;274-279;366-378;426-450;482-495 <MA: R;Urade, R; Nasu, M.; Moriyama, T.; Wada, K.; Kito, M. J. Biol. Chem. 267, 15152-15159, 1992 A;Title: Protein degradation by the phosphoinositide-specific phospho A;Reference number: A43051; MUID:92340568; PMID:1321829 A;Accession: A43051; MU
protein disulfide-isomerase (IN;Alternate names: ER60 proteic; pecies: Mus musculus (house C; pecies: Mus musculus (house C; Date: 25-Dec-1994 #sequence C; Accession: S41661 R; Mazzarella, R.A.; Marcus, N.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Title: HIP-70: a protein induced by estrogen in the brain and A;Ritle: HIP-70: a protein induced by estrogen in the brain and A;Reference number: A40095; MUID:90208308; PMID:2181662
A;Recession: A40095
A;Recession: A40095
A;Recession: A40095
A;Residues: 26-43 <4008>
C;Comment: ER60 may be part of a complex capable of catalyzing c;Comment: ER60 protease does not appear to be a cytoplasmic 1-pi 11005;Comment: ER60 protease does not appear to be a cytoplasmic 1-pi 11005;Comment: ER60 protease does not appear to be a cytoplasmic 1-pi 11005;Comment: ER60 protease does not appear to be a cytoplasmic 1-pi 11005;Comment: ER60 protease does not appear to be a cytoplasmic 1-pi 11005;Comment: ER60 protease does not appear to be a cytoplasmic 1-pi 11005;Comment: ER60 protease does not appear to be a cytoplasmic 1-pi 11005;Comment: ER60 protease does not appear to be a cytoplasmic 1-pi 11005;Comment: ER60 protease does not appear to be a cytoplasmic 1-pi 11005;Comment: ER60 protease does not appear to be a cytoplasmic 1-pi 11005;Comment: ER60 protease does not appear to be a cytoplasmic 1-pi 11005;Comment: ER60 protease does not appear to be a cytoplasmic 1-pi 11005;Comment: ER60 protease does not appear to be a cytoplasmic 1-pi 11005;Comment: ER60 protease does not appear to be a cytoplasmic 1-pi 11005;Comment: ER60 protease does not appear to be a cytoplasmic 1-pi 11005;Comment: ER60 protease does not appear to be a cytoplasmic 1-pi 11005;Comment: ER60 protease does not appear to be a cytoplasmic 1-pi 11005;Comment: ER60 protease does not appear to be a cytoplasmic 1-pi 11005;Comment: ER60 protease does not appear to be a cytoplasmic 1-pi 11005;Comment: ER60 protease does not appear to be a cytoplasmic 1-pi 11005;Comment: ER60 protease does not appear to be a cytoplasmic 1-pi 11005;Comment: ER60 protease does not appear to be a cytoplasmic 1-pi 11005;Comment: ER60 protease does not appear to be a cytoplasmic 1-pi 11005;Comment: ER60 protease does not appear to be a cytoplasmic 1-pi 11005;Comment: ER60 protease does not 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Title: Molecular cloning A;Title: Molecular cloning A;Reference number: A28807; A;Accession: A28807 A;Molecule type: mRNA
                                                                                                                                                                                                                                                                     S41661
                                                                                                                                                                                                                                                                                                                                                                                                                                              Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             рЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Residues: 25-34;173-194;43:
R; Mobbs, C.V.; Fink, G.; Pfa
Science 247, 1477-1479, 1990
                                                                                                                                                                                                                                                                                                             RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             F;501-504/Region: endoplasmic reticulum retention sign F;57-60,405-408/Disulfide bonds: redox-active #status
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Residues:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              :33-118/Domain: thioredoxin homology <TX1>
:383-469/Domain: thioredoxin homology <TX2>
:501-504/Region: endoplasmic reticulum retention signal #status
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              25-504/Product: ER60 protease #status experimental <MAT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              432
                                                                                                                                                                                                                                                                                                                                                                                                                                              256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ņ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          E---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VELTEETFNATVMASDS----IVLFYAGWQAVSMAFLQSYIDVAVKLKGTSTMLLTRINC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ITDALLEMFPEITVENLPSYFRLQKPLLILFSDGTVNPQYKKAILTLVKQKYLDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DDNGEGITIFRPLHLANKFEDKIVAYTEKKMTSGKSRSLFRKAFGLCPHMTEDNKDLIQ-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EEYLSGELYKDLILYSSYSYLGLFSPTMKTAKEDFSEAGNYLKGYV-----ITGIYSEE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TANTITCNKYGVTGYPTLKIFRDGEEAGAYDGPRTADGIVS--HLKKQAGPASVPLRTED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ADWSDVCTKQNVTEFPIIKMYKKGENPVSYAGMLGTKDLLKFIQLNRISYPVNITSIQEA 491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LELTDENFESRVSDTGSAGLMLVEFFAPWCGHCKRLAPEYEAAATRLKG--IVPLAKVDC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1-504 <BEN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          25-34;173-194;432-459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -FKKFISDKDASVVGFFRDLFSDGHSEFLKAASNLRDNYRFAHTNVESLVKEY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                        #sequence_revision
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VLLLSTKYAASLPALLLARHTEGKIESI -----
                                                                                                                                                                                                                                                                                                                                                                                                                                              -GKDLLTAYYDVD----
                                                                                                                                proteinase; GRP5((house mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pfaff,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              and complete amino-acid sequence; MUID:88288403; PMID:3398923
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  159 <URA>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  53;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 153;
                                                                                                                                                                                 GRP58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                        03-Aug-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                              YEKNTKGSNYWRNRVMWVAKTFLDA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              No.
                                                                                                                                                                                                                         ERp61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0.029;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 1;
                                                                                                                                                                                                                    precursor
                                                                                             #text_change 17-Mar-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 504;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -PLASTHAQDIVQI 587
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              endoplasmic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gonzaga,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PID:g56905
Gonzaga, H.M.S.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      of form-I phosphoinositid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g cleavage of itself, of
1-phosphatidylinositol-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   phospholipase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  oxidoreductase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LH-RH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  atypical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AMAR>
                                                                                                                                                                                                                                                                                                                                                                                                                                              292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ř
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   reticulum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   C-alpha
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Beaven,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              pituitar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   prote
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3
```

z

Haugejorden,

S

<u>.</u> .

Balcarek,

J.M.;

Baldassare,

Ġ.

: : :

602

255

200

308 657

```
C:Superfamily: protein disulfide-isomerase; thioredoxin homology c:Keywords: intramplecular oxidoreductase; isomerase; multifunctional F:1-22/Domain: signal sequence #status predicted <SIG>
F:23-517/Product: protein disulfide-isomerase #status predicted <MAT>
F:59-66/Domain: redox-active #status predicted <REAl>
F:59-66/Domain: redox-active #status predicted <REAl>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         C;Keywords: endoplasmic reticulum; intramolo
F;33-118/Domain: thioredoxin homology <TX1>
F;383-469/Domain: thioredoxin homology <TX2:
Дb
                                 δÃ
                                                                           В
                                                                                                               ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       R;Warsame, A.; Vad, R.; Kristensen, T.; Oyen, T.B.
Biochem. Biophys. Res. Commun. 281, 1176-118, 2001
A;Title: Characterization of a gene encoding a Pichia pastoris
A;Reference number: JC7623; MUID:21139750; PMID:11243858
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     C;Superfamily: protein disulfide-isomerase; thioredoxin homology C;Keywords: endoplasmic reticulum; intramolecular oxidoreductase; isomerase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Arch. Biochem. Biophys. 308, 454-460, 1994
A;Title: ERp61 is GRP58, a stress-inducible luminal endoplasmic reticulum protein, A;Reference number: S41661; MUID:94153092; PMID:8109975
A;Accession: S41661
                                                                                                                                                                                                                                                                  F;401-408/Domain:
                                                                                                                                                                                                                                                                                                                                                                                   A;Gene:
                                                                                                                                                                                                                                                                                                                                                                                                          C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                           A; Experimental source: strain GS115
                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Cross-references: GB:AJ302014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Molecule type: DNA
A; Residues: 1-517 <WAR>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Accession: JC7623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           C;Date: 30-Jun-2001 #sequence_revision 30-Jun-2001 #text_change
C;Accession: JC7623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   protein disulfide-isomerase (EC 5.3.4.1) precursor -
C;Species: Pichia pastoris
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Molecule type: protein A; Residues: 1-504 < MAZ>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Status: preliminary
                                                                                                                                                                                                                                           514-517/Region:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local
                                                                                                                                                                                Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              432
                                       435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       376 VELTEETFNATVMASDS----IVLFYAGWQAVSMAFLQSYIDVAVKLKGTSTMLLTRINC
                                                                                                                   376 VELTEETFNATVMASDSIVL-FYAGWQAVSMAFLQSYIDVAVKLKGTSTMLLTRINCADW 434
96
                                                                               36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      28
                                                                                                                                                                                Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  D--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TANTINTCNKYGVTGYPTLKIFRDGEEAGAYDGPRTADGIVS--HLKKQAGPASVPLRTED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LELTDENFESRVSDTGSAGLMLVEFFAPWCGHCKRLAPEYEAAATRLKG--IVPLAKVDC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EEYLSGELYKDLILYSSVSVLGLFSPTMKTAKEDFSEAGNYLKGYV----
KELCQGYEIKGYPTLKVFHGEVEVPSDYQGQRQSQSIVSYMLKQSLPPVSEINATKDLDD
                                     SDVCTKQNVTEFPIIKMYK-KGENPVSYAGMLGTKDLLKFIQLNRISYPVNITSIQEAEE 493
                                                                             VKLTEATFESFITSNPHVLAEFFAPWCGHCKKLGPELVSAAEILKDNEQVKIAQIDCTEE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ITDALLEMEPEITVENLPSYFRLQKPLLILFSDGTVNPQYKKAILTLVKQKYLDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      E-----FKKFISDKDASVVGFFRDLFSDGHSEFLKAASNLRDNYRFAHTNVESLVKEY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADWSDVCTKQNVTEFPIIKMYKKGENPVSYAGMLGTKDLLKFIQLNRISYPVNITSIQEA 491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DDNGEGITIFRPLHLANKFEDKIVAYTEKKMTSGKSRSLFRKAFGLCPHNTEDNKDLIQ-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -----VLLLSTKYAASLPALLLARHTEGKIESI-----PLASTHAQDIVQI
                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                             endoplasmic reticulum
                                                                                                                                                                                                                                                                redox-active #status
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -GKDLLTAYYDVD-----YEKNTKGSNYWRNRVMMVAKTFLDA
                                                                                                                                                                                3.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3.7%;
                                                                                                                                                               64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   53;
                                                                                                                                                                                Score 150.5; DB Pred. No. 0.044;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 152; DB 2
Pred. No. 0.034;
                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                      predicted <REA2>
m retrieval signal #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 <TX2>
                                                                                                                                                                                                   DB 2;
                                                                                                                                                             161;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   123;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    yeast (Pichia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                           Indels
                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -ITGIYSEE
                                                                                                                                                           47;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              protein disulfide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 58;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            24-Aug-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 642
                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                             enzyme
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                587
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      143
                                                                             95
155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        255
                                                                                                                                                             15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         redox-acti
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                isomer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 but
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    :
Db
                                                                                                                                                                                                                                                                              δÕ
                                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                          δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Cross-references: EMBL:AL049655; GSPDB:GN00061; ATSP:F28P10. A;Experimental source: cultivar Columbia; BAC clone F28P10 C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            C; Accession: To
                                 Ş
                                                                           В
                                                                                                                   QΥ
                                                                                                                                                           망
                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                        B
                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Introns: 192/2; 235/3; 291/1; 330/3; 351/3; 380/3; 405/3; 428/3; C; Superfamily: protein disulfide-isomerase; thioredoxin homology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                protein disulfide-isomerase homolog F28P10.60 - Arabidopsis thaliana
C;Species: Arabidopsis thaliana (mouse-ear cress)
C;Date: 23-Apr-1999 #sequence_revision 23-Apr-1999 #text_change 22-Oct-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Molecule type: DNA
A; Residues: 1-566 < QUE>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Reference number: Z15793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       submitted to the Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 T06724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Map position:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Gene: ATSP: F28P10.60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Accession:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
398
                                                                             343
                                                                                                                                                             283
                                                                                                                                                                                                   525
                                                                                                                                                                                                                                             223
                                                                                                                                                                                                                                                                                  498
                                                                                                                                                                                                                                                                                                                          163
                                                                                                                                                                                                                                                                                                                                                              438
                                                                                                                                                                                                                                                                                                                                                                                                      105
                                                                                                                                                                                                                                                                                                                                                                                                                                              379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         286 LLLLRDSLEVNIPQ----DANVVFKRAEEGVPVEFLVLHDVDLIISHVENNMHIEEIQED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      658
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   17 ILLLVNSRAENASSGSDLDEELAFLAAEESKEQ------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local Similarity
                                                                                                                                                                                                                                                                                                                                                              CTKQNVTEFPIIKMYKKGENPVSYAGMLGTKDLLKFIQLNRISYPVNITSIQEAEEYLSG
                                                                                                                                                                                                                                                                                                                                                                                                                                            TEETFNATV-MASDSIVLFYAGWQAVSMAFLQSYIDVAVKLKGTSTMLLTRINCADWSDV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      QHRDFENYDDLEQGGGEFHHGDHGYEEEPLPPVDEKDVAV----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GILRAYFDPLPPLPLLVLVNLHSGGQVFAFPSDQAIIEENLVLWLKKLEAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TIA-EAKEPVI----VQVL-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               YLSGELYKDLILYSSYSYLGLFSPTMKTAKEDFSEAGNYLKGYVITGIYSEE--DVLLLS
                                                                               EVAKSFKGKFVFVYVQMDNEDYGEAVSGFFGVTGAAPKVLVYTGNEDMRKFILDG-----
                                                                                                                                                                                                   DFSEA----GNYLKGYVITGIYSEEDVLLLS-TKYAAS---
                                                                                                                                                                                                                                                                                                                        AQKYETQGFPTVFLFVDGEMRKTYEGERTKDGIVTWLKKKASPSIHNITTKEEAERVLSA
                                                                                                                                                                                                                                                                                                                                                                                                      TKDNFTEFVGNNSFAMVEFYAPWCGACQALTPEYAAAATELKGLAA--LAKIDATEEGDL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HAKNLNMDE-EKLPLFVIHDLVS-NKKFGVPQDQELTNKDVTELIEKFIAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TFKSYAEANIPLAYYFYE---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NLPSYFRLQKPLLILFSDGTVNPQYKKAILTLVK-----QKYLDSFTPCWLNLKNTPVGR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TDYAKKYTSDSTPAYLLVR--PGEEPSVYSGEELDETHLVHWIDIESKPL---FGDIDGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TKYAA - - - - - SLPALLLARHTEGKIESI - - - - PLASTHAQDIVQIITDALLEMFPEITVE
                                     PEITVENLPSYFRLQKPLLILFSDGTVNPQYK----
                                                                                                                                                             EEEKLARFDGNFTKTAIAEFVSANKVPLVINFTREGASLIFESSVKNQANESEKHLPTLR
                                                                                                                                                                                                                                           EPKLYFGFLNSLYGSESEELAAASRLEDDLSFYQTASPDIAKLFEIETQYKRPALYLLKK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   129;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 T06724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 T06724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Choisne, N.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence Database,
KTLAEDFLADKLKPFYKSDPLPENNDGDVKVIVGNNFDEIVLDES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Robert,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NEEQRAAAADIIKPFAKEQRGKINF - - - - VGLDAVKFGK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               71;
                                                                                                                                                                                                                                                                                  --LYKDLILYSSVS--VLGLFS-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 148; DB 2; Pred. No. 0.074;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ი.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -PEDASNLESNTTFYGVAGTLREKFTFVSTKS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -PDIDVQDDEVAETVFRDRKRKLPLELTVEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Brottier, P.; ase, April 1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 200;
                                     -----KAI------LTLVKQ
                                                                                                                   LASTHAQDIVQIITDALLEME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 566;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Wincker,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SHGGGSYH-EEEHDH
                                                                                                                                                                                                                                                                                  -PTMKTAKE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      . 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      708
                                                                                                                                                                                                 ---LPALL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            P.; Cattolico,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    J-----F
```

455/3;

493/3;

Ľ.; Art

Gaps

28;

497

162

378 63

104

397

342 562 282 524 222

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Perfect score:
Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OM protein - protein search, using sw model
    Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
  185
177.5.5
169.5.5
169.5.5
169.5.5
169.5.7
169.5.7
169.5.7
169.5.7
169.5.7
169.5.7
169.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
119.5.7
11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         112892 segs, 41476328 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BLOSUM62
Gapop 10.0 ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-847-046-2
4142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 March 13, 2003, 17:10:57; Search time 16 Seconds (without alignments) 2091.962 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 MFSGFNVFRVGISFVIMCIF.....FKEAEKSFRRDKELGCSKVN 807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SwissProt_40:*
  GenCore version 5.1.4_p5_4578 Copyright (c) 1993 - 2003 Compugen Ltd.
  Length DB
  Gapext 0.5
PDI_RAT
PDI_BOVIN
PDI_BOVIN
EUGI_YEAST
PDA4_MOUSE
PDA6_ARATH
RBP1_PLAVB
PDA6_MEDSA
RRP0_ROTS1
Y659_PASMU
NOT1_YEAST
PDI_CHICK
DPOI_HAEIN
PDI_MOUSE
PDII_ARATH
                                                                                                                                                                                                         PDA3_MOUSE
PDI_YEAST
BS2_TRYBB
PDI1_SCHPO
PDA4_RAT
PDA4_HUMAN
ER60_SCHMA
MLH1_YEAST
YEA4_YEAST
PDI_RABIT
                                                                                                                                                                                                                                                                                                                                                 PDI_HUMIN
PDI_DROME
PDA3_BOVIN
PDI_ASPOR
PDA4_CAEEL
PDA3_HUMAN
PDI_ASPNG
PDA3_RAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                112892
                                                                                                                                                                                                                                                                         p55059 humicola i
p54399 drosophila
p38657 bos taurus
Q00248 aspergilli
p34329 caenorhabu
p30101 homo sapii
Q12730 aspergilli
p11598 rattus no
p27773 mus muscu
p17967 saccharom
p12865 trypanoso
Q10057 schizosac
p38659 rattus no
 Q9cmz1
P25655
P09102
P43741
P09103
Q9xi01
                                                                               P13667
P38658
P38659
P35194
P21195
P047387
P077387
P073307
P053307
P080033
O020263
P22678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Description
                                                                                                                                                  5 oryctolagus
5 rattus norv
7 homo sapien
7 bos taurus
4 saccharomyc
                                                                                                                                                                                                                                                                                                                                              8 aspergillus
9 caenorhabdi
1 homo sapien
0 aspergillus
Tattus norv
           a mus musculu
a arabidopsis
b plasmodium
l medicago sa
g simian 11 r
l pasteurella
saccharomyc
gallus gall
haemophilus
mus musculu
                                                                                                                                                                                                                                     7 homo sapien
8 schistosoma
0 saccharomyc
                                                                                                                                                                                                                                                                             7 saccharomyc
5 trypanosoma
7 schizosacch
9 rattus norv
                                                                                                                                                                                                                                                                                                                                                                                                                     humicola in
drosophila
bos taurus
                                                                                                                                                                                                                        saccharomyc
                                                                                                                                                                                                                                                                                                                                      mus musculu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 1
PDI_HUMIN
ID PDI_HUMIN
Query Match
```

45	44	43	42	41	40	39	38	37	36	35	3 4
116	116	118.5	118.5	118.5	119.5	120	121.5	121.5	122	122.5	123
2.8	2.8	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	3.0	3.0
1818	341	1088	1014	519	359	1102	3911	1088	586	4451	644
۲	۲	\vdash	Н	_	ب	μ.	س	_	۳	Ц	1
Z294_HUMAN	MO25_HUMAN	RRPO_ROTBU	NEBL_HUMAN	PDA5_HUMAN	PDI2_SCHPO	UBP7_HUMAN	AKA9_HUMAN	RRPO_ROTBR	UVRC_MYCPN	GRSB_BACBR	C3AA_BACTT
094822 homo sapien	Q9y376 homo sapien	P21615 bovine rota	076041 homo sapien	Q14554 homo sapien	013811 schizosacch	Q93009 homo sapien	Q99996 h a-kinase	P17468 bovine rota	P75350 mycoplasma	P14688 b gramicidi	P07130 bacillus th

ALIGNMENTS

STANDARD;

PRT;

505

AA.

			•
DR D	888888888888888	CCCCRRRRRRCC CCCCCLTTRAKK	OAC ODE DE DAC
74296; AAC 070337; 1ME 07037; 1ME 07137; 1ME	interchain disulfide bonds in proteins to form the native structures. SUBCELLULAR LOCATION: Endoplasmic reticulum lumen (By similarity). SIMILARITY: CONTAINS 2 THIOREDOXIN DOMAINS. SIMILARITY: CONTAINS 2 THIOREDOXIN DOMAINS. This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).	SEQUENCE FROM N.A. STRAIN-KASI; MEDLINE=94369094; PubMed=7765273; Kajino T., Sarai K., Imaeda T., Idekoba C., Asami O., Yamada Y., Hirai M., Udaka S.; "Molecular cloning of a fungal cDNA encoding protein disulfide isomerase."; "Molecular cloning of a fungal cDNA encoding protein disulfide isomerase."; "Biosci. Biotechnol. Biochem. 58:1424-1429(1994). -i- FUNCTION: PARTICIPATES IN THE FOLDING OF PROTEINS CONTAINING DISULFIDE BONDS, MAY BE INVOLVED IN GLYCOSYLATION, PROLYL HYDROXYLATION AND TRIGLYCERIDE TRANSFER (BY SIMILARITY).	p55059; p1-0CT-1996 (Rel. 34, Created) p1-0CT-1996 (Rel. 34, Last sequence update) protein disulfide isomerase precursor (EC 5.3.4.1) (PDI). Humicola insolens. Eukaryota; Fungi; Ascomycota; mitosporic Ascomycota; Humicola. NCBI_TaxID=34413;

4.5%;

Score 185;

DB 1;

Length 505;

Local Si hes 112;

Similarity

21.9%; 79;

Pred. No. 8.9e-05; 9; Mismatches 213;

Indels

108;

Gaps

22

```
PRESULT
PRESUL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               р
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PDI_DROME (Re)
P54399; Q9VUL7;
01-OCT-1996 (Re)
Adams M.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D., Amanatides P.G., Scherer S.E., Li P.W., Hoskins R.A., Galle R.F., George R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N., Sutton G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X., Brandon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfelffer B.D. Wan K.H., Doyle C., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G Abril J.F., Agbayani A., An H.-J., Andrews-Pfannkoch C., Baldwin D.
                                                                                                                                                                                             SEQUENCE FROM
                                                                                                                                                                                                                                                                                            MEDLINE=95307561; PubMed=7787847;
MCKay R.R., Zhu L., Shortridge R.D.;
                                                                                                                                               MEDLINE-20196006; PubMed-10731132;
                                                                                                                                                                                                                                                                                                                                          TISSUE-Head;
                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Metazoa; Arthropoda; Mandibulata;
Insecta; Pterygota; Neoptera; Endopterygota;
Muscomorpha; Ephydroidea; Drosophilidae; Dro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Drosophila melanogaster (Fruit fly).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                01-OCT-1996 (Rel. 34, Created)
01-OCT-1996 (Rel. 34, Last sequal 16-OCT-2001 (Rel. 40, Last annual 16-OCT-2001 (Rel. 40, Last annual 1995)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Protein disulfide
                                                                                                                                                                                                                                    Insect
                                                                                                                                                                                                                                                     lsomerase/phospholipase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              126
                                                                                                                                                                                                                     Kay R.R., Zhu L., Shortriage K.U., Drosophila gene that encodes a member of the protein iomerase/phospholipase C-alpha family.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TVHLQLGLPLVFIVSQQA------TYEADRRTAEW--VAWRLLG-KAGVLLLLR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     --EETDLCQQHGVEGYPTLKVFRGLDNVSPYKGQRKAAAITSYMIKQSLPAVSEVTK-DN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VIMCIFYMPTVNSLPELSPQKYFSTLQPGLEELNEAVRPLQDYGISVAKVNCVKEEISRY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SGSRTVEDLIKFIAENG-KYKAAIS--EDAEE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGMLGTKDLLKFIQLNRISYPVNITSIQEAEE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LAPKYEELGALYAKSEFKDRVVIAKVD-ATANDV--PDEIQGFPTIKLYPAGAKGQPVTY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FLQSYIDVA - - - VKLKGTSTMLLTRINCADWSDVCTKQNVTEFPIIKMYKKGE - - NPVSY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EGPDIDVQDDEVAETVFRDRKRKLPLELTVELTEETFNATVMASDSIVLFYAGWQAVSMA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DKFPAFAIQEVAKNQKFPFDQEKE-ITFEAIKAFVDDFVAGKIEPSIKSEPIPEKQ----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DSLEV - - - - NIPQDANVVFKRAEEGVPVEFLVLHDVDLIISHVENNMHIEEIQEDEDNDM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 D-YMSAGIPLAYIFAETAEERKELSDKLKPIAEAQRGVINFGTIDAKAFGAHAGNLNLKT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KAP-----AIVLYKDFDEGKAVFSEKFEVEAIEKFAKTGATPLIGEIG--PETYS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EDVEYAHLYFFHCKLVLDLTQQCRRTLMEQPLTTLNIHLFIKTMKAPLLTEVAEDPQQVS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LEEFKKADKA-----VLVAYVDASDKASSEVFTQVAEKLRDNYPFGSSSDAALAEAEGV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LEDLQNIENALKGKANIIFSYVRAIGIPEHRAVMEAGFVYGTTYQFVLTTEIALLESIGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LVLAEFFAPWCGHCKALAP-----
                                                                                                                                                                                                                                                                                                                                                            FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          34, Last sequence update)
40, Last annotation updat
isomerase precursor (PDI)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ----EYEEAATTLKEKNIKLAKVDCT-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             update)
(PDI) (EC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             476
                                                                                                                                                                                                                                                                                                                                                                                                                        Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A
                                         Champe M., Pfeiffer B.D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                            Diptera;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pancrustacea; Hexapoda;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5.3.4.1)
                                                                                                                                                                                                                                                                             disulfide
    G.L.G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      80
```

```
RA Dodson K., Doup L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn P., RA Dodson K., Doup L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn P., RA Dodson K., Evangelista C.C., Ferraz C., Ferriera S., Fleischmann W., RA Fosler C., Gabrielian A.E., Garg N.S., Gebbart W.M., Glasser K., RA Glodek A., Gong F., Gorrell J.H., Gu Z., Guan P., Harris M., RA Harris N.L., Harvey D., Helman T.J., Hernandez J.R., Houck J., RA Hostin D., Houston K.A., Howland T.J., Wei M.-H., Ibegwam C., RA Kimmel B.E., Kodira C.D., Kraft C., Kravitz S., Kulp D., Lai Z., RA Kimmel B.E., Kodira C.D., Kraft C., Kravitz S., Kulp D., Lai Z., RA Liu X., Mattei B., McIntosh T.C., McLeod M.P., McPherson D., RA Lasko P., Lei Y., Levitsky A.A., Li J., Li Z., Liang Y., Lin X., RA Liu X., Mattei B., McIntosh T.C., McLeod M.P., McPherson D., RA Merkulov G., Milshina N.V., Mobarry C., Morris J., Moshrefi A., RA Mount S.M., Moy M., Murphy B., Murphy L., Muzny D.M., Nelson D.L., RA RA Helson D.R., Nelson K.A., Nixon K., Nusskern D.R., Pacleb J.M., RA Palazzolo M., Pittman G.S., Pan S., Pollard J., Puri V., Reese M.G., RA Ra Helnert K., Remington K., Saunders R.D.C., Scheeler F., Shen H., RA Shue B.C., Siden-Kiamos I., Simpson M., Skupski M.P., Smith T., RA Spier E., Spradling A.C., Stapleton M., Skupski M.P., Smith T., RA Spier E., Spradling A.C., Stapleton M., Skupski M.P., Smith T., RA Wang Z.-Y., Wassarman D.A., Weinstock G.M., Weissenbach J., RA Wang Z.-Y., Wassarman D.A., Weinstock G.M., Weissenbach J., RA Wang X.H., Zhong F.N., Zhong W., Zhou X., Zha Q., Zhao Q., Zheng L., Scheng X.H., Zhong F.N., Zhong W., Zhou X., Zhu S., Zhu X., Smith H.O., The genome sequence of Drosophila melanogaster.";

C. - TISTIFTIN ERONDS (RN SMITLAFTY)
Query Match
Best Local
                                                                                                          SITE
SEQUENCE
                                                                                                                                                                                                                                                                 CHAIN
DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ballew R.M., I
Beeson K.Y., I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     use by non-profit institutions as long modified and this statement is not removed. entitles requires a license arrangement.
                                                                                                                                                                                                                                                                                                                                                                                                               TIGREAMS; TIGRO1136; pdi_dom; 2.
TIGREAMS; TIGRO1130; ER_PDI_fam;
PROSITE; PS00014; ER_TARGET; 1.
PROSITE; PS00194; THIOREDOXIN; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        This SWISS-PROT entry is copyright. It is produbetween the Swiss Institute of Bioinformatics the European Bioinformatics Institute. There \varepsilon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ballew R.M., Basu A., Baxendale J., Bayraktaroglu L., Beasley Beeson K.Y., Benos P.V., Berman B.P., Bhandari D., Bolshakov Borkova D., Botchan M.R., Bouck J., Brokstein P., Brottier P. Burtis K.C., Busam D.A., Butler H., Cadleu E., Center A., Cha Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P., de Pablos B., Delcher A., Deng Z., Mays A.D., Dew I., Dietz September 1, Delcher A., Deng Z., Mays A.D., Dew I., Dietz September 1, Delcher A., Deng Z., Mays A.D., Dew I., Dietz September 1, Delcher A., Deng Z., Mays A.D., Dew I., Dietz September 1, Delcher A., Deng Z., Mays A.D., Dew I., Dietz September 1, Delcher A., Deng Z., Mays A.D., Dew I., Dietz September 1, Deck I., Dietz September 1, Deck I., 
                                                                                                                                                                                         DOMAIN
                                                                                                                                                                                                                                     DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         or send
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ptam;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                InterPro; IPR000886; InterPro; IPR000063;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FlyBase; FBgn0014002; Pdi.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SUBUNIT: HOMODIMER (BY SIMILARITY).
SUBCELLULAR LOCATION: Endoplasmic reticulum lumen (Potential).
TISSUE SPECIFICITY: EXPRESSED IN ALL HEAD AND BODY TISSUES.
DEVELOPMENTAL STAGE: UBIQUITOUSLY EXPRESSED DURING DEVELOPMENT
SIMILARITY: CONTAINS 2 THIOREDOXIN DOMAINS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DISULFIDE BONDS (BY SIMILARITY). CATALYTIC ACTIVITY: Rearrangement of both interchain disulfide bonds in proteins to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        structures
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PF00085; thiored; 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AE003532; AAF
P07237; 1MEK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PR00421;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         an email to license@isb-sib.ch).
                                                                                                          19
56
397
482
493
                                                                                                                                                                                                                                                                                                                                                                                       center;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAA86480.1;
                                                                                       18
496
59
400
489
496
55781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAF49659
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         THIOREDOXIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ER_target.
Thiored.
                                                                                                                                                                                                                                                                                                                                            Isomerase; Endopla
   4
19
                                                                                                                  ¥.
                                                                                                                                                                                     PROTEIN DISULFIDE REDOX-ACTIVE (BY STREDOX-ACTIVE (BY STREDOX-GLU.
   Score
Pred.
                                                                                                              PREVENT SECRETION
EB6E04C4216E7A81
                                                                                                                                                                                                                                                                                                                                                                               Endoplasmic reticulum;
177;
No. 0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   It is produced through a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                There are no
   DB 1;
.00029;
                                                                                                                                                                                                                         JLFIDE ISOMERASE.
E (BY SIMILARITY).
E (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    as its content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   form
                                                                                                                  FROM ER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               and the
                                       Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ЬĄ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        restrictions
                                                                                                                                                                                                                                                                                                                                                                                       Repeat;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   native
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Reese M.G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Chandra
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S.M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     E.M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 H.O.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Κ. A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                on
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Σ.Ω
, ,
```

Similarity

```
RESULT
PDA3_BO
 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                               01-FEB-1995 (Rel. 31, Created)
01-FEB-1995 (Rel. 31, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Protein disulfide isomerase A3 precursor (EC 5.3.4.1) (Disulfide isomerase ER-60) (ERP60) (58 kDa microsomal protein) (P58) (ERP57).
 This
                                                                                                                                                                                                                                                                 Bos taurus (Bovine).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea
Bovidae; Bovinae; Bos.
                                                                                                                                               secretory form and inducible
                                                                                                                                                          Hirano N., Shibasaki F., Sakai R., Tanaka T., Nishida J., Yazaki Y., Takenawa T., Hirai H.; Yazaki Y., Takenawa T., Hirai H.; Molecular cloning of the human glucose-regulated protein ERp57/GRP58, a thiol-dependent reductase. Identification
                                                                                                                                                                                                                MEDLINE=96096758; PubMed=8529662;
                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                        PDIA3 OR GRP58
                                                                                                                                                                                                                                                                                                                                                                                                    P38657;
                                                                                                                                                                                                                                                                                                                                                                                                                               BOVIN
                                                                                                                     transformation.";
Eur. J. Biochem. 234:336-342(1995).
                                                                                                                                                                                                                                                      NCBI_TaxID=9913;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 889
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    659
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         20
                                                                                         CATALYTIC ACTIVITY: Rearrangement of both interchain disulfide bonds in proteins to
                        CAUTION: WAS ORIGINALLY THOUGHT TO BE A PHOSPHATIDYLINOSITOL-4,5-BISPHOSPHATE PHOSPHODIESTERASE TYPE I (PHOSPHOLIPASE C-ALPHA).
                                                  SIMILARITY: CONTAINS 2
                                                                 SUBCELLULAR LOCATION: Endoplasmic reticulum.lumen
                                                                                structures
                                                                                                                                                                                                                                                                                                                                                                                                                 BOVIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FRKEDNKVIDFNLDRTL 462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LPSYFRLOK-PLLILFSDGTVNPQY----KKAILTLVKQKYLDSFTPCWLNLKNTPVGRG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SWISS-PROT entry
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FKEAEK - - - SFRRDKEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KSVLVEFYAPWCGHCKQLAPIYDQLAEKYKDNEDIVIAKMDSTANELESIKISSFPTIKY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      YKPESDDLSAETIEAFLKKFLDGKLKQHLLSQELP-EDWDKNPVKVLVSSNFESVALDKS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               --PSDQAIIEENLVLWLKK-LEAGLENHITI--LPAQEW-KPP---LPAYDFLSM-IDAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HIEKYVDPLKEIAKKYRDDILFVTISSDEEDHTRIFEFFGMNKEEVPTIRLIKLEEDMAK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LKKFAQVQSLPLIVDFNHESASKIFGGSIKSHLLFFVSRE-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NADVI --- AKYEAKDNGVVLFKPFDDK----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EEDVLLLSTKYAASLPALLLARHTEGKIESIPLASTHAQDIVQIITDALLEMFPEITVEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DLTSVADAEQFL-----KD----NEIAIIGFFKDLESEEAKTFTKVANALDSFVF-GVSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NITSIQEAEEYLSGELYKDLILYSSVSVLGLFSPTMKTAKEDFSEAGNYLKGYVITGIYS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MLLTRINCADWSDVCTKQNVTEFPIIKMYKKGENPVSYAGMLGTKDLLKFIQLNRISYPV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EAEVKVEEGVLVATVDNFKQLIADNEFVLVEFYAPWCGHCKALAPEYAKAAQQLAEKESP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ELTVELTEETFNATV-----MASDSIVL--FYAGWQAVSMAFLQSYIDVAVKL-KGTST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TSQRGTRKVP---KCMKETDVQENDKEQHEDKSAV----RKEPIETLRIKHWNRSNW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ILRAYFDPLPPLPL-----LVLVNLHSGGQ-----VFAF-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             99;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                STANDARD;
 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          801
copyright. It
                                                  THIOREDOXIN DOMAINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            96;
                                                                                                                                               expression
                                                                                                                                                                                                                                                                                                                                                                                                                PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                505
 is
                                                                                                                                              by the
                                                                                                                                                                                                                                                                                                                                                                                                                AA
produced through
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            180;
                                                                                           intrachain and form the nativ
                                                                                                                                               oncogenic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ----KSVFE--GELNEEN
                                                                                                                                                                       protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                 (Ву
                                                                                           native
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ------GG
                                                                                                                                                            of.
                                                                                                                                                                                                                                                                                Bovoidea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            122;
                                                                 similarity)
 þ
                                                                                                                                                             its
 collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     658
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   687
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            25;
                                                                                                                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                         Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δã
                                                                                                                                                                                                                                                                                                                                               B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SITE
                                                                                                                                                                                                     PDIA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pfam;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CHAIN
                                                                                                                                                                                                                                                                                                                                                 254
                                                                                                                                                                                                                                                                                                                                                                          909
                                                                                                                                                                                                                                                                                                                                                                                                    194
                                                                                                                                                                                                                                                                                                                                                                                                                            552
                                                                                                                                                                                                                                                                                                                                                                                                                                                      146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            28
```

```
PDI_ASPOR
ID PDI_A
AC Q0024
AC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOUTH THE TENT OF 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-NOV-1997 (Rel. 01-NOV-1997 (Rel. 30-MAY-2000 (Rel. 3Protein disulfide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DISULFID DISULFID
                                                                                                                                                     Lee B., Yamada O., Kitamoto K., Takahashi K.;
Submitted (JUN-1996) to the EMBL/GenBank/DDB databases.
-i- FUNCTION: PARTICIPATES IN THE FOLDING OF PROTEINS CC
DISULFIDE BONDS, MAY BE INVOLVED IN GLYCOSYLATION, E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TIGREAMS; TIGR01126; pdi_dom; 2.
TIGREAMS; TIGR01130; ER_PDI_fam; 1.
TIGREAMS; TIGR01130; ER_PDI_fam; 2.
PROSITE; PS00194; THIOREDOXIN; 2.
Redox-active center; Isomerase; Endoplasmic reticulum; Repeat; SIGNAL 1 24 BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           between the Swiss Institute of Bioinformatics and the EMBL the European Bioinformatics Institute. There are no restrict use by non-profit institutions as long as its content is modified and this statement is not removed. Usage by and foentities requires a license agreement (See http://www.isb-sib.
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Fungi; Ascomycota; Pezizomycotina; Eurotiomycetes;
Eurotiales; Trichocomaceae; mitosporic Trichocomaceae; Asperg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q00248;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PDI_ASPOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL; D16235; BAA03760.1; HSSP; P07237; 1MEK.
                                                                                                                                                                                                                                                                                                             STRAIN-RIB 40;
                                                                                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=5062;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Aspergillus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRINTS; PR00421;
                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              376 VELTEETFNATVMASDS----IVLFYAGWQAVSMAFLQSYIDVAVKLKGTSTMLLTRINC
                                                                    HYDROXYLATION AND TRIGLYCERIDE TRANSFER (BY SIMILARITY) CATALYTIC ACTIVITY: Rearrangement of both intrachain an
                                          interchain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ---LLQGKDLLIAYYDVDYEKNAKGSNYWRNRVMMVAKKFLDA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SYFRLQ-KPLLILFSD-----GTVNPQYKKAILTLVKQKYLDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NKYDDDGEGITLFRPSHLTNKFEDKTVAYTEQKMTSGKIKRFIQENIFGICPHMTEDNKD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TKYAASLPALLLAR--HTEGKIESIPLASTHAQ----DIVQIITDALLEMFPEITVENLP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TANTITCNKYGYSGYPTLKIFRDGEESGAYDGPRTADGIVSHLKKQAGPASVPLKSEEEF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ADWSDVCTKONVTEFPIIKMYKKGENPVSYAGMLGTKDLLKFIQLNRISYPVNITSIQEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LELTDDNFESRITDTGSSGLMLVEFFAPWCGHCKKLAPEYEAAATRLKG--IVPLAKVDC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EKFISDK---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EEYLSGELYKDLILYSSVSVLGLFSPTMKTAKEDFSEAGNYLKGYVITGIYSEEDVLLLS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PF00085; thiored; 2.
S; PR00421; THIOREDOXIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      66;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IPR000063; Thiored.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1
25
57
406
502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                oryzae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AA;
                                          disulfide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -----DASVVGFFKDLFSEAHSEFLKAASNLRD---NYRFAHTNVESLV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 35, Created)
35, Last sequ
39, Last anno
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            505
60
409
505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    56929 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Last sequence update)
Last annotation updat
merase precursor (EC 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      56;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 175.5;
Pred. No. 0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PREVENT SECRETION FROM (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PROTEIN DISULFIDE ISOMERASE A REDOX-ACTIVE (BY SIMILARITY). REDOX-ACTIVE (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A85911748DC70A23 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                          proteins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AΑ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             00037
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DВ
                                             б
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   128;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .4.1)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1;
                                             form
                                                                                intrachain and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (PDI)
                                             the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ę
                                                                                                                                                                                           CONTAINING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             restrictions
                                             native
                                                                                                                                                            PROLYL
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Aspergillus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      33;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Signal.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            commerci
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9;
```

```
RESULT 5
PDA4_CAEEL
ID PDA4_CAEEL
                                                                                                                                                                                         B
                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qy
                                                                         밁
                                                                                                  Š
                                                                                                                                В
                                                                                                                                                           õ
                                                                                                                                                                                                                                                                                                        Ф
                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOTTTTERESTRANCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DISULFID
SITE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pfam; PF00085; thlored; 3.
PRINTS; PR00421; THIOREDOXIN.
TIGREAMS; TIGR01126; pd1_dom; 2.
TIGREAMS; TIGR01130; ER_PDI_fam; 1.
PROSITE; PS00014; ER_TARGET; 1.
PROSITE; PS00194; THIOREDOXIN; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL; D85900; BAA12913.1; -. HSSP; P07237; IMEK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Redox-active
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            InterPro; IPR000886; InterPro; IPR000063;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -!- SUBCELLULAR
                                                                          442
                                                                                                     453
                                                                                                                                  385
                                                                                                                                                              395
                                                                                                                                                                                           328
                                                                                                                                                                                                                      345
                                                                                                                                                                                                                                                  291
                                                                                                                                                                                                                                                                               299
                                                                                                                                                                                                                                                                                                          243
                                                                                                                                                                                                                                                                                                                                      241
                                                                                                                                                                                                                                                                                                                                                                   195
                                                                                                                                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                                                                            148
                                                                                                                                                                                                                                                                                                                                                                                                                                                       128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         15 VIMCIFYMPTVNSLPELSPQKYFSTLQPGLEELNEAVRPLQDYGISVAKVNCVKEE-ISR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             74
                                                                                                    KKG--ENPVSYAGMLGTKDLLKFIQLNRISYPVNITSIQEAEEYLSGE
                                                                                                                                                                                                                                                                                                                                                                                                                                                    DLQNIENALKGKANIIFSYVRAIGIPEHRAVMEAGFVYGT-----TYQFVLTTEIALL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           YCGKEKDLMKAY----LFKGNILLREFPTDTLFDVNAIVAHVLFALLFSEVKYIT--NLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LVLAEFFAPWCGHCKALAP-KY-------EQAATELKEKNIPLVKVDCTEEEALCR
                                                                         AAGAKDSPVEYEGSRTVEDLANFVKENG-KHKVDALEVDPKKEQESGD
                                                                                                                                                             L--FYAGWQAVSMAFLQSYIDVAVKLKGTSTMLLTRINCADWSDVCTKQNVTEFPIIKMY
                                                                                                                                                                                        SKEVKAKDIGKFIQDVLDDKVEPSIKSEAIPETQEGPVTVVV---AHSYKDLVLDNEKDV
                                                                                                                                                                                                                      --DMEGPDI----
                                                                                                                                                                                                                                                                            QDANVVFKRAEEGVPVEFLVLHDVDLIISHVENNMHIE-----EIQEDEDN-----
                                                                                                                                                                                                                                                                                                        PETYSG-YITAGIPLAYIFA-ETKEEREQFTEEFKFIAEKHKGSINIVTI---
                                                                                                                                                                                                                                                                                                                                                                   KAEGVKQP--
                                                                                                                                                                                                                                                                                                                                                                                              ESIGSEDVEYAHLYFFHCKLVLDLTQQCRRTLMEQPLTTLNIHLFIKTMKAPLLTEVAED
                                                                                                                                                                                                                                                                                                                                                                                                                            EIKTMDKI - -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DQGVE-----GYPTLKIFRGLDAVK--PYQGARQTEAIVSYMVKQSL-PAVSPVTPENLE
                                                                                                                                  LLEFYAPWCGHCKALAPKYEELASLYKDIPEVTIAKID-ATANDV--PDSITGFPTIKLF
                                                                                                                                                                                                                                                                                                                                     PQQVSTVHLQLGLPLVFIVSQQATYEADRRTAE - - WVAWRLLGKAGVLLLLRDSLEVNIP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            center;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AA;
    STANDARD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CONTAINS 2
                                                                                                                                                                                                                                                                                                                                                                 ----SIVLYKDFDEKKATYDGEIEQDALLSWVKTASTPLVGELG--
                                                                                                                                                                                                                                               ----DAKLYGAHA-GNLNLDPSKFPAFAIQDPEKNAKYPYDQ
                                                                                                                                                                                                                                                                                                                                                                                                                         -VVIGYIASDD-----QTANDIFTTFAESQRDNYLFAATSDASIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     20
515
61
396
515
                                                                                                                                                                                                        -DVQDDEVAETVFRD----RKRKLPLELTVELTEETFNATVMASDSIV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        56458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Isomerase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ER_target.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 : Endoplasmic reticulum lumen 2 THIOREDOXIN DOMAINS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               107;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 172.5; DB 1;
Pred. No. 0.00061;
7; Mismatches 185;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PREVENT SECRETION FROM ER (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REDOX-ACTIVE (BY SIMILARITY)
REDOX-ACTIVE (BY SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PROTEIN DISULFIDE ISOMERASE.
    PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A155B38E20E37EAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Endoplasmic reticulum; Repeat;
    618
    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels 131;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length
                                                                                                     498
                                                                         488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (Ву
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           515;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               similarity).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                          194
                                                                                                                                  441
                                                                                                                                                                                        384
                                                                                                                                                                                                                      394
                                                                                                                                                                                                                                                  327
                                                                                                                                                                                                                                                                            344
                                                                                                                                                                                                                                                                                                        290
                                                                                                                                                                                                                                                                                                                                     298
                                                                                                                                                                                                                                                                                                                                                                 242
                                                                                                                                                                                                                                                                                                                                                                                           240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               28;
```

:

QΥ

```
OF THE FET TO COLUMN TO THE PROPERTY OF THE PR
Query Match
Best Local S
Matches 87
                                                                                                                                                                                                                                                          TIGREAMS; TIGRO1126; pdi_dom; 3.
TIGREAMS; TIGRO1126; pdi_dom; 3.
TIGREAMS; TIGRO1130; ER_PDI_fam; 1.
PROSITE; PS00014; ER_TARGET; 1.
PROSITE; PS00194; THTOREDOXIN; 3.
Hypothetical protein: Isomorror
                                                                                                                                                      CHAIN
DISULFID
DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        This SWI
between
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             P34329;
01-FEB-1994 (Rel. 28, Created)
16-OCT-2001 (Rel. 40, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
Probable protein disulfide isomerase A4 precursor
                                                                                                                                                                                                                              Endopl:
                                                                                                                                                                                                                                                                                                                                                                                 WormPep; C14B9.2; CE00073.
InterPro; IPR000886; ER_target.
InterPro; IPR000063; Thiored.
Pfam; PF00085; thiored; 3.
PRINTS; PR00421; THIOREDOXIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         the European Bioinformatics Institute. The use by non-profit institutions as not removed modified and this statement is not removed. entities requires a license agreement (See or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Wilson R., Ainscough R., Anderson K., Baynes C., Berks M.,
Bonfield J., Burton J., Connell M., Copsey T., Coulson
Craxton M., Dear S., Du Z., Durbin R., Favello A., Fraser A.,
Fulton L., Gardner A., Green P., Hawkins T., Hillier L., Jier M.,
Johnston L., Jones M., Kershaw J., Kirsten J., Laisster N.,
Johnston L., Jones M., Kershaw J., Kirsten J., Laisster N.,
Latreille P., Lightning J., Lloyd C., Mortimore B., O'Callaghan M.
Parsons J., Percy C., Rifken L., Roop aximoders D., Shownkeer
Sims M., Smaldon N., Smith A., Smith M., Sonnhammer E., Staden R.,
Sulston J., Thierry-Mieg J., Thomas K., Vaudin M., Vaughan K.,
Waterston R., Watson A., Weinstock L., Wilkinson-Sproat J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL; L15188; AAM22024.1; PIR; S44756; S44756.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -i- FUNCTION: NOT KNOWN.-i- CATALYTIC ACTIVITY: Rearrangement of both
interchain disulfide bonds in proteins to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Wohldman P.; "2.2 Mb of o
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A. STRAIN-Bristol N2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Metazoa;
Rhabditidae; Pelode
                                                                                            SEQUENCE
                                                                                                                                    DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEROPS; C17.002;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -!- SUBCELLULAR LOCATION:
-!- SIMILARITY: CONTAINS :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Nature 368:32-38(1994)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                elegans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE=94150718; PubMed=7906398;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Caenorhabditis elegans.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        C14B9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .2 Mb of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      structures
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SWISS-PROT entry is copyright. It is produced through een the Swiss Institute of Bioinformatics and the E
                                                                                                                                                                                                                                                   lasmic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        P07237;
  87; Conservative
                                                                                     1
22
65
176
529
615
618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   contiguous nucleotide sequence from chromosome III
                                                                                                                                                                                                                                                 reticulum;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Peloderinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        IMEK.
                                                                            21
618
68
179
532
618
69797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Nematoda;
                    4.28;
                                                                                                                                                                                                                                                 Isomerase; Redox-active center;
; Repeat; Signal.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       : Endoplasmic reticulum lumen 3 THIOREDOXIN DOMAINS.
                                                                                            X.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       oda; Chromadorea; Caenorhabditis.
    90;
Pred. No. 0.00); Mismatches
                                            Score
                                                                                                                                    PROBABLE PROTEIN DISULFIDE ISO
REDOX-ACTIVE (BY SIMILARITY).
REDOX-ACTIVE (BY SIMILARITY).
REDOX-ACTIVE (BY SIMILARITY).
                                                                                                               PREVENT
                                                                                                                                                                                                                              POTENTIAL.
                                                                                          IDC0207A71444220
                         172.5;
No. 0.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (See http://www.isb-sib
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          There are no rest
                       .0008
                                              DВ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Rhabditida;
  175;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Usage
                                            1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        intrachain and form the native
                                                                                          FROM ER
0 CRC64;
    Indels
                                            Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (EC
                                                                                                                 ER.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          уd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (By similarity).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5.3.4.1) (ERp-72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Rhabditoidea;
                                                                                                                                                                                                       ISOMERASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          and
                                                618;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        jh a collaboration
EMBL outstation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Shownkeen
    97;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .ch/announce/
    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Α.,
                                                                                                                                                                                                       A4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               way
    17;
```

. .

```
RESULTI PORALITI PORA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           γQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Hirano N., Shibasakı r., mirai H.;
Yazaki Y., Takenawa T., Hirai H.;
"Molecular cloning and characterization of a cDNA
"Molecular cloning and characterization of a cDNA
nhospholipase C-alpha: proposal of redesignation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PDA3_HUMAN STANDARD; PRT; 505 AA.

P30101; 014255; 013453; 09UMU7;
01-APR-1993 (Rel. 25, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
15-JUN-2002 (Rel. 41, Last annotation update)
Protein disulfide isomerase A3 precursor (EC 5.3.4.1) (Disulfide isomerase ER-60) (ERP60) (58 kDa microsomal protein) (p58) (ERP57)
(58 kDa glucose regulated protein).

PDIA3 OR GRP58 OR ERP60.
Bourdi M., Demady D., Martin J.L., Jabbour S.K., George J.W., Pohl L.R.;
"cDNA cloning and baculovirus expression of the endoplasmic reticulum P58: characterization as a isomerase isoform, but not as a protease or a ca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HUMAN
                                                                                                                                                                                                                                             Kito
                                                                                                                                                                                                                                                                                                              Charnock-Jones D.;
Submitted (JUN-1995)
                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                       Submitted
                                                                                                                                                                                                                                                                    SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                        TISSUE-Placenta;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mammalia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens (Human)
                                                                                                                        MEDLINE=96063616;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        626
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ENLEAFMKQISSGKAKAHVKSAPAPKDDK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   F-EPKSRTYNKAAATSEDLLAFFREHSAPLVGKMTKKNAATRY-TKKPLVVVYYNADFSV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HTEGKIESIPLASTHAQDIVQIITDALLEMFPEITVENLPSYFRLQKPLLILFSDGTVNP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TMKTAKEDFSEAGNYLKGYVITGIYSEE --
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PVSYAGMLGTKDLLKFIQLNRISYPVNITSIQEAEEYLSGELYKDLILYSSVSVLGLFSP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HSGGQVFAFPSDQAIIEENLVLWLKKL---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QYREGSEYWRSKYLNIAQKYQKDKYK--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 QYKKA-----ILTLVKQKYLDSFTPCWLNLKNTPVGRGILRAYFDPLPLLPLLVLVNL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EDSTAFEAFSDSAEMLREEFKTMGHTSDPAAFKKWDAKPNDIIIF-----YPSLFHSK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GWQAVSMAFLQSYIDVAVKLKGT-STMLLTRINCADWSDVCTKQNVTEFPIIKMYKKGEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DGKGPNDYDGGRDEAGIVEWVESRVDPNYKPPPEEVVTLTTENFDDFISNNELVLVEFYA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -FDYNGPREAAGIIKYMTDQSKPAAKKLPKLKDVERFMS----KD-----DVTIIGFFAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PWCGHCKKLAPEYEKAAQKLKAQGSKVKLGKVDATIEKDLGTKYGVSGYPTMKIIRNGRR
                                                                                                                                                                                                                                                                                                                                                                                            FROM N.A.
                                                                                                                                                                                                                                             Urade
                                                                                                                                                                                                                                                                    FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                         Biophys.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AATSQRGTRKVPKCMKETDVQENDK
                                                                                                                                                                                                                    (FEB-1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -FAVADEEEFAKE-----LEELGLGDSGLEHNVVVFGYDGKKYPMNPDEFDGELD
                                                                                                                        PubMed=7487104;
                                                                                                                                                                                                                                                                                                                                                                                                                                           Res.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PubMed=7945384;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Chordata;
                                                                                                                                                                                                                                                                                                                 ç
                                                                                                                                                                                                                       ç
                                                                                                                                                                                                                                                                                                                                                                                                                                      Commun. 204:375-382(1994).
                                                                                                                                                                                                                                                                                                                 the
                                                                                                                                                                                                                       the
                                                                                                                                                                                                                    EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                 EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Craniata; Vo
Catarrhini;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EAGLENHITILPAQEWKPPLPAYDFLSMID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Vertebrata;
i; Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ----DVLLLSTKYAASLPALLLAR
                                                                                               S.K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Tanaka
     s a protein carnitine
                                                                                                                                                                                                                       databases
                                                                                                                                                                                                                                                                                                                 databases
                                                  human liver
                                                                                                 Martin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      of phospholipase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ₽.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 bovine
                                                                                                 B. M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Nishida
                           disulfide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (ERp57)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ۲,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            283
```

```
protein expression map database.
Proteomics 2:212-223(2002).
-!- CATALYTIC ACTIVITY: Rearrang
                                                                                                                                                                                                                                                                             Harris R.A., Yang A., Stein Parekh R., Waterfield M.D.,
                                                                                                                                                                                                                                                                                                             MEDLINE=21829512; PubMed=11840567;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TISSUE=Colon carci
MEDLINE=97295306;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Simpson R.J., Dorow D.S.;
"Two-dimensional electrophoretic analysis of human proteins: mapping of proteins that bind to the SH3 lineage kinase MLK2.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "Human liver protein map: a reference microsequencing and gel comparison."; Electrophoresis 13:992-1001(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE=93162045; PubMed=1286669;
HoChstrasser D.F., Frutiger S., Paquet
Pasquali C., Sanchez J.-C., Tissot J.-I
Appel R.D., Hughes G.J.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Jaakkola M., Palotie A., Kivirikko K.I.;
"Structures of the human gene for the protein disulfide isomerase-
related polypeptide ERp60 and a processed gene and assignment of t-
genes to 15q15 and 1q21.";
Genomics 42:397-404(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Arch.
                                                                                                                                                                                                                        "Cluster analysis of an extensive
                                                                                                                                                                                                                                                                                                                                       TISSUE=Breast cancer;
                                                                                                                                                                                                                                                                                                                                                                                           Electrophoresis
                                                                                                                                                                                                                                                                                                                                                                                                                protein database
                                                                                                                                                                                                                                                                                                                                                                                                                              Vandekerckhove J.; "Microsequences of 145 proteins recorded"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Rasmussen H.H., van Damme
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE=93162043; PubMed=1286667;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TISSUE=Keratinocytes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE OF 95-104 AND 472-479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "A two-dimensional gel database of Electrophoresis 18:605-613(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE OF 25-54;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Electrophoresis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE=97295304; PubMed=9150946; Rasmussen R.K., Ji H., Eddes J.S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TISSUE-Breast
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TISSUE=Lymph;
Strausberg R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A. MEDLINE=97349107; PubMed=9205111;
                                                                                                                                                                                                                                                                                                                                                          MASS SPECTROMETRY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ji H., Reid G.E.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Rasmussen R.K., Ji H.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE OF 25-33.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Submitted (SEP-2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Koivunen P., Horelli-Kuitunen N.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    acyltransferase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6
                                                SUBCELLULAR LOCATION: Endoplasmic reticulum lumen (By similarity)
MASS SPECTROMETRY: MW=54265.22; METHOD=MALDI.
SIMILARITY: CONTAINS 2 THIOREDOXIN DOMAINS.
CAUTION: WAS ORIGINALLY THOUGHT TO BE A PHOSPHOLIPASE C-ALPHA).
BISPHOSPHATE PHOSPHODIESTERASE TYPE I (PHOSPHOLIPASE C-ALPHA).
                                                                                                                           SUBCELLULAR LOCATION:
                                                                                                                                                                interchain disulfide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Biochem. Biophys.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              26-42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         carcinoma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             carcinoma;
                                                                                                                                                                                                                                                                                                                                                                                 (e of normal human epidermal keratinocytes."; 13:980-969(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             18:588-598(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PubMed=9150948;
Moritz R.L., Ed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          62-75 AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       б
is copyright. It is produced through a collaboration stitute of Bioinformatics and the EMBL outstation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   323:397-403(1995).
                                                                                                                                                                                  Rearrangement of
                                                                                                                                                                bonds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  J.,
                                                                                                                                                                                                                                                                             0'Hare
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          95-104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Puype
                                                                                                                                                                in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eddes J.S.,
                                                                                                                                                                                                                                                                           Lucy K
e M.J.,
                                                                                                                                                              ment of both proteins to
                                                                                                                                                                                                                                          human breast cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Helaakoski T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Moritz R.L.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  M., Gesser B.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           . -D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        database
                                                                                                                                                                                                                                                                                            ~
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Z.
                                                                                                                                                                                                                                                                             Neville M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 colon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         , Bairoch A., R
Bjellqvist B.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Burgess A.W.,
                                                                                                                                                                intrachain
form the na
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   carcinoma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        established
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Reid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Karvonen
                                                                                                                                                                                                                                                                             .A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  breast
domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   assignment of these
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Celis J.E.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        <u>ດ</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       , Ravier F.,
Vargas R.,
                                                                                                                           (By similarity).
                                                                                                                                                                                                                                          cell line
                                                                                                                                                                                                                                                                           Herath A.,
Page M.J.,
                                                                                                                                                                native
                                                                                                                                                                                     and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Simpson R.J.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 proteins.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    of.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ۳.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ρĄ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  mixed
```

This SWISS-PROT entry

the

Swiss

Institute

European Bioinformatics Institute

institutions as

long

There are no rest

restrictions

in

no

```
Qy
                                                                                                         밁
                                                                                                                                                  δÃ
                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                               Ş
밁
                                                                                                                                                                                                                                                                                                                         망
                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         $\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\text{$\
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CONFLICT
CONFLICT
CONFLICT
CONFLICT
CONFLICT
CONFLICT
CONFLICT
CONFLICT
CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PEAM; PE00085; thiose, ...
PEAM; PE00085; thiose, ...
PRINTS; PR00421; THIOREDOXIN.
TIGREAMS; TIGR01126; pd1_dom; 2.
TIGREAMS; TIGR01130; ER_PDI_fam; 1.
TIGREAMS; TIGR01130; ER_PDI_fam; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MIM;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SWISS-2DPAGE; P30101;
Aarhus/Ghent-2DPAGE; PHCI-2DPAGE; P30101;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HSSP; P07237; 1M
MEROPS; C17.001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       use by non-profit modified and this st
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SITE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Redox-active
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Genew;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Siena-2DPAGE; P30101;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              or send an email to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    InterPro;
  194
                                                       552
                                                                                                         144
                                                                                                                                                              492
                                                                                                                                                                                                                                                                    432
                                                                                                                                                                                                                                                                                                                                                                        376 VELTEETFNATVMASDS----IVLFYAGWQAVSMAFLQSYIDVAVKLKGTSTMLLTRINC
                                                                                                                                                                                                                  98
                                                                                                                                                                                                                                                                                                                            28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10 D83485; BAAL1928.1; U4268; AAC50331.1; U75885; AAC51518.1; U75876; AAC51518.1; U75876; AAC51518.1; U75877; AAC51518.1; U75879; AAC51518.1; U75879; AAC51518.1; U75879; AAC51518.1; U75880; AAC51518.1; U758
NEYDDNGEGIILFRPSHLTNKFEDKTVAYTEQKMTSGKIKKFIQENIFGICPHMTEDNKD
                                                                                                            円--
                                                                                                                                                                                                               TANTNTCNKYGVSGYPTLKIFRDGEEAGAYDGPRTADGIVS -- HLKKQAGPASVPLRTEE
                                                                                                                                                                                                                                                                    ADWSDVCTKQNVTEFPIIKMYKKGENPVSYAGMLGTKDLLKFIQLNRISYPVNITSIQEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        602046;
                                                 TKYAASLPALLLAR--HTEGKIESIPLASTHAQ----DIVQIITDALLEMFPEITVENLP
                                                                                                                                                           EEYLSGELYKDLILYSSVSVLGLFSPTMKTAKEDFSEAGNYLKGYVITGIYSEEDVLLLS
                                                                                                                                                                                                                                                                                                                         LELTDDNFESRISDTGSAGLMLVEFFAPWCGHCKRLAPEYEAAATRLKG--IVPLAKVDC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           D16234; BAA03759.1; Z49835; CAA89996.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HGNC:4606; GRP58
                                                                                                                                                                                                                                                                                                                                                                                                                                  64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            IPR000063; Thiored
                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                         FKKFISDKDASIVGFFDDSFSEAHSEFLKAASNLRD----NYRFAHTNVESLV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      center;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1MEK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAH14433.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        statement is not removed. Usage by and for commercial
a license agreement (See http://www.isb-sib.ch/announce/
to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           19
22
217
225
238
272
358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 505
60
409
505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      56782
                                                                                                                                                                                                                                                                                                                                                                                                                                                           4.1%;
22.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5410;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOINED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WW.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              IEF.
                                                                                                                                                                                                                                                                                                                                                                                                                             59;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (BY SIMILARITY).

A -> G (IN REF. 3).

A -> Y (IN REF. 1).

D -> Y (IN REF. 2).

C -> G (IN REF. 2).

D -> G (IN REF. 1).

D -> G (IN REF. 1).

D -> G (IN REF. 1).

D -> G (IN REF. 1).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PROTEIN DISULFIDE ISOMERASE A3.
REDOX-ACTIVE (BY SIMILARITY).
REDOX-ACTIVE (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PREVENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         529E5B6692D0D7E9
                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Endoplasmic reticulum;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           169.5; DB :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SECRETION FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                  127;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ۳.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               <u>ა</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Repeat;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    505;
                                                                                                                                                                                                                                                                                                                                                                                                                               33
•
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Signal
                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                           431
253
                                                    605
                                                                                                         193
                                                                                                                                                           551
                                                                                                                                                                                                               143
                                                                                                                                                                                                                                                                                                                         85
                                                                                                                                                                                                                                                                                                                                                                                                                               10;
```

```
RESULT
PDI_ASI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
  Query Match
Best Local S
Matches 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    I_ASPNG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PDI_ASPNG
Q12730;
01-NOV-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
STRAIN-CBS 120.49 / N400;
STRAIN-CBS 120.49 / N400;
MEDLINE-97174110; PubMed-9021130;
MEDLINE-97174110; PubMed-9021130;
MISCOLATION AGENCY TO BE COME TO BE C
                                                                                                       SITE
                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL;
                                                                                                                                                                                                                              TIGRRAMS; TIGRO1126; pdi_dom; 2.
TIGREAMS; TIGRO11101; ER_PDI_fam;
PROSITE; PS00014; ER_TARGET; 1.
PROSITE; PS00194; THIOREDOXIN; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Submitted (JUL-1995) to the EMBL/GenBank/DDBJ databases
-[- FUNCTION: PARTICIPATES IN THE FOLDING OF PROTEINS CONTAINING
-[DISULEIDE BONDS, MAY BE INVOLVED IN GLYCOSYLATION, PROLYL
HYDROXYLATION AND TRIGLYCERIDE TRANSFER (BY SIMILARITY)
                                                                                    SEQUENCE
                                                                                                                                                                                          Redox-active SIGNAL
                                                                                                                                                                                                                                                                                                                   InterPro; IPR000886; ER_target.
InterPro; IPR000063; Thiored.
Pfam; PF00085; thiored; 3.
PRINTS; PR00421; THIOREDOXIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   entities requires
or send an email t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            use by non-profit institutions as modified and this statement is not re
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STRAIN-NRRL
Malpricht S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eurotiales; Trichocomaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Protein disulfide PDIA OR PDI1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                01-NOV-1997
30-MAY-2000
                                                                                                                             DISULFID
                                                                                                                                                 DISULFID
                                                                                                                                                                        CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         between
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -!- CATALYTIC ACTIVITY: Rearrangement of both
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID=5061;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Aspergillus niger.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   European Bioinformatics Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SIMILARITY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SUBCELLULAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               structures
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SWISS-PROT entry is copyright. It is produced through een the Swiss Institute of Bioinformatics and the El
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  interchain disulfide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ---LIQGKDLLIAYYDVDYEKNAKGSNYWRNRVMMVAKKFLDA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SYFRLQ-KPLLILFSD-----GTVNPQYKKAILTLVKQKYLDS
                                                                                                                                                                                                                                                                                                                                                                                                 X98797; CAA67332.1; -.
X89449; CAA61619.1; -.
P07237; IMEK.
                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   s requires a license agreement (S an email to license@isb-sib.ch).
                                                                                      515
                                                                                                          21
54
389
512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (Rel. 35, Last sequence update)
(Rel. 39, Last annotation update)
ulfide isomerase precursor (EC 5.3.4.1)
    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ψ
                                                                                                                                                                                                               center;
                                                                                      AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CONTAINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LOCATION:
                                                                                ter; Isomerase; Endoplasmic reticulum; Re
20 POTENTIAL.
515 PROTEIN DISULFIDE ISOMERASE.
57 REDOX-ACTIVE (BY SIMILARITY)
392 REDOX-ACTIVE (BY SIMILARITY)
392 REDOX-ACTIVE (BY SIMILARITY)
515 PREVENT SECRETION FROM ER (P
515 PREVENT SECRETION FROM ER (P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ascomycota; Pezizomycocomaceae; mitosporic
                       20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Created)
                     .18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    bonds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Endoplasmic reticulum lumen (By similarity).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     THIOREDOXIN DOMAINS.
    ; 68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              is not removed.
Pred. No. 0.00
9; Mismatches
                                                                                    REDOX-ACTIVE (BY SIMILARITY).
REDOX-ACTIVE (BY SIMILARITY).
REDOX-BOTT ESCRETION FROM ER (PO
2B0058B788400AD9 CRC64;
                                           Score
                                                                                                                                                                        PROTEIN DISULFIDE ISOMERASE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pezizomycotina; Eurotiomy itosporic Trichocomaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  proteins
                   169
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                long
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (See http://www.isb-sib.ch/announce/
                         0 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     There are
                     ; DB 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                as its content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ţ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Usage
                                           1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    form
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eurotiomycetes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      intrachain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ņo
    Indels
                                      Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Aspergillus.
                                                                                                       (POTENTIAL).
                                                                                                                                                                                                               Repeat;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    native
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   and
    145;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               a collaboration -
MRI outstation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           outstation
    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9
    27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        its
```

Ş

15

VIMCIFYMPTVNSLPELSPQKYFSTLQPGLEELNEAVRPLQDYGISVAKVNCVKEEISRY

```
A TO COMPANY OF THE PROPERTY O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT
PDA3_R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               01-OCT-1989 (Rel. 12, Created)
01-FEB-1996 (Rel. 33, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Protein disulfide isomerase A3 precursor (EC 5.3.4.1) (Disulfide isomerase ER-60) (ERp60) (58 kDa microsomal protein) (p58) (ERp57
             Martin J.L., Pumford N.R., Larosa A.C., Mart Beaven M.A., Pohl L.R.;
Beaven behavior of halothane covalently binds reticulum protein that is highly homologous phosphatiaylinositol-specific phospholipase
                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
Kito M., Urade R.;
"Role of novel microsomal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                  PARTIAL SEQUENCE.
                                                                                                                                                                                                                                                                                                                                                                             phosphoinositide-specific phospholipase
                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE=88288403; PubMed=3398923;
Bennett C.F., Balcarek J.M., Varrichio A.,
"Molecular cloning and complete amino-acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PDIA3 OR GRP58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               P11598;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PDA3_
                                                                                                                                             MEDLINE-91315499;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGFPTLRLYPAGAKDSPIEYSGSRTVEDLANFVKENG-KHNVDALNVASEETQEGGDV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ESQ-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ::: |: | |:| |:| || || LVLAEFFAPWCGHCKALAP-KY--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TEFPIIKMYKKG--ENPVSYAGMLGTKDLLKFIQLNRISYPVNITSIQEAEEYLSGEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APWCGHCKALAPKYDELAALY - -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGWQAVSMAFLQSYIDVAVKLKGTSTMLLTRINCADWSDVCTK------QNV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EDEDNDMEGPDIDVQDDEVAETVFRDRKRKLPLELTVELTEETFNATVMASDSIVL--FY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LNLDSQKFPAFAIQDPAKNAKYPYDQAKELNADEVEKFI----QDVLDGKVEPSIKSEPVP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LLLLRDSLEVNIPQD----ANVVFKRAEE--GVPVEFLVLHDVDLIISHVENNMHIEEIQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ETYSG-YIGAGVPLAYIFA-ETKEEREKYTEDFKPIAQKHKGAINIATIDAKMFGAHAGN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QQVSTVHLQLGLPLVFIVSQQATYEADRRTAEW------VAWRLLG-KAGV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LEDLQNIENALKGKANIIFSYVRAIGIPEHRAVMEAGFVYGTTYQFVLTTEIALLESIGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EQPSIV-LYKDFDEKKAVYDGEIEQEA------IHSWVKSASTPLVGEIG--P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EDVEYAHLY - - FFHCKLVLD - - LTQQCRRTLMEQPLTTLNIHLFIKTMKAPLLTEVAEDP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (0-2).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DLCRSQGVEGYPTLKIFRGVDSSKPYQGARQTESIVSYMIKQSLPAVSSVNE-EN
                                                                                                                                                                                                                                                  Acad.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STANDARD;
                                                                                                                  PubMed=1650195;
ord_N.R., Larosa
                                                                                                                                                                                                                                                     В,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -VVIGYIPSDDQETYQAFEKYAESQRDNYLFAATDDAAIAKSEGV
                                                                                                                                                                                                                                                  cysteine pr
. Biol. Sci.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PTDTLFDVNAIVAHVLFALL--FSEVKYITN
                                                                                                                                                                                                                                               proteases.";
ci. 71:189-192(1995)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ----EEAATELKAKNIPLVKVDCTAEE----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ADHPDLAAKVTIAKIDATANDVPDPI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VTV-VVAHSYKDLVIDNDKDVLLEFY
                                                                                                                                                                                                                                                                                                                                                                                                       ი.";
                                                                                                                       Martin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AΑ
                                                                                                                                                                                                                                                                                                                                                                                                                       Crooke S.
                  C-alpha
                                                                  to an
                                       g
                                                                                                                       В.м.,
                                                                  endoplasmic
                                                                                                                                                                                                                                                                                                                                                                                                                                  of
                                                                                                                     Gonzaga H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Murinae; Rattus
                                                                                                                                                                                                                                                                                                                                                                                                                               form-I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (ERp57)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       87
```

```
THE TEST OF THE TE
                                                                                 DISULFID DISULFID
                                                                                                                                                                                     PRINTS: PRO0421; THIOREDOXIN.
TIGRFAMS: TIGR01126; pdi_dom; 2.
TIGRFAMS: TIGR01130; ER_PDI_fam;
PROSITE; PS00194; THIOREDOXIN; 2
                                                                                                                                                                                                                                                                                                                                                                               EMBL; X12355; CAA30916.1;
EMBL; D63378; BAA09695.1;
PIR; A28807; A28807.
                      CONFLICT
                                                                                                                                                                                                                                                                         InterPro; IPR000063; Thiored. Pfam; PF00085; thiored; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     or send an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "Inhibition by acidic phospholipids protease, a novel cysteine protease, EBBS Lett. 312:83-86(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "Protein degradation by the phosphoinositide-specific C-alpha family from rat liver endoplasmic reticulum.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     "Purification and characterization of a new isozyme of thiol:protein-disulfide oxidoreductase from rat hepatic microsomes. Relationship of this isozyme to cytosolic phosphatidylinositol-specific phospholipase C form lA.";
                                                                                                                                                                        Redox-active
                                                                                                                                                                                                                                                                                                                   MEROPS; C17.001;
                                                                                                                                                                                                                                                                                                                                           HSSP; P07237; 1MEK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             modified and this statement is not removed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     use
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Urade R., Kito
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           J. Biol.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Urade R.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Srivastava S.P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TISSUE-Brain, and Pituitary,
MEDLINE-90208308; PubMed-2181662;
Mobbs C.V., Fink G., Pfaff D.W.;
"HIP-70: a protein induced by est
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE=93050170;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE OF 26-34; 174-193; 433-446 AND MEDLINE=92340568; PubMed=1321829;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE=92041865;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Biochem.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Science
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           INHIBITION BY PHOSPHOLIPIDS.
IEDLINE=93050170; PubMed=1330685;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   form 1A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Biol.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   European Bioinformatics Institute. The by non-profit institutions as long
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SUBCELLULAR LOCATION: Endoplasmic reticulum lumen.
SIMILARITY: CONTAINS 2 THIOREDOXIN DOMAINS.
CAUTION: MAS ORIGINALLY (REF.1) THOUGHT TO BE A PHOSPHATIDYL-
INOSITOL-4,5-BISPHOSPHATE PHOSPHODIESTERASE TYPE I (PHOSPHOLI
C-ALPHA) THEN WAS THOUGHT (REF.6 AND REF.7) TO BE A THIOL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STRUCTURES.
ENZYME REGULATION:
                                                                                                                                                                                                                                                                                                                                                             A40095; A40095.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PROTEASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 interchain disulfide bonds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SWISS-PROT entry is copyright. It is produced through sen the Swiss Institute of Bioinformatics and the EN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             247:1477-1479(1990)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Chem.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Chem.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Biophys.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Nasu M., Moriyama T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     email to license@isb-sib.ch).
                                                                                                                                                                     center;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           267:15152-15159(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          266:20337-20344(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Chen N.Q., Liu Y.X.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PubMed=1657921;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Res. Commun.
                                                                505
60
409
505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     258-269;
                                                                                                                                                                        Isomerase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEEMS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Rearrangement of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     285-310;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TO
MRFSCLALLPGVA

1).
                                                                             PROTEIN DISULFIDE ISOMERASE A3
REDOX-ACTIVE (BY SIMILARITY).
REDOX-ACTIVE (BY SIMILARITY).
                                          AB)
                                                                PREVENT SECRETION FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       estrogen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     178:679-685(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BΕ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Wada K.,
                                                                                                                                                                     Endoplasmic
                                          SIMILARITY).
                                                                                                                                                                                                             ۲.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 proteins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         INHIBITED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             of protein degradation by of endoplasmic reticulum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   347-350;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Holtzman J.L.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   There are no rest ng as its content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   448-458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     both
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Kito
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6
                                                                                                                                                                     reticulum; Repeat;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ВΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3
                      MPSAALRCSRAWR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 intrachain
form the na
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     412-419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       brain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACIDIC
                                                                닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               γď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                phospholipase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (PHOSPHOLIPASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PHOSPHOLIPIDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 native
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LH-RH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     D
                      Ή
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ." 닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ĺn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     way
```

```
RESULT
PDA3_MC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CONFLICT
CONFLICT
CONFLICT
SEQUENCE
                                                                                     Merrick B.A., Wichter L.L., Patterson R.M., He C., Selkirk J "Identification of the two isoforms of phospholipase C-alpha dividing murine fibroblasts by protein microsequencing.", Biochem. Arch. 9:335-340(1993).

-i- CATALYTIC ACTIVITY: Rearrangement of both intrachain and
                                                                                                                                                                                                                                                                                                                                                                                                                                         01-AUG-1992 (Rel. 23, Created)
01-AUG-1992 (Rel. 23, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Protein disulfide isomerase A3 precursor (EC isomerase ER-60) (ERp60) (58 kDa microsomal p
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PDA3_MOUSE P27773;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MOUSE
                                                                                                                                                        TISSUE=Fibroblast;
                                                                                                                                                                                               Merrick B.A., Patterson R.M., Wichter L.L., He C., Selki "Separation and sequencing of familiar and novel murine using preparative two-dimensional gel electrophoresis."; Electrophoresis 15:735-745(1994).
                                                                                                                                                                                                                                                                                                   Hempel W.M., Defranco A.L.; "Expression of phospholipase C i J. Immunol. 146:3713-3720(1991).
                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A. MEDLINE=91237072; PubMed=2033248;
                                                                                                                                                                                                                                                                                                                                                                                                                                 isomerase ER-60) (ERp60) (PDIA3 OR GRP58 OR ERP60 OR
                                                                                                                                                                     SEQUENCE OF 25-41,
                                                                                                                                                                                                                                                  MEDLINE=95009907; PubMed=7523108;
                                                                                                                                                                                                                                                            TISSUE-Fibroblast;
                                                                                                                                                                                                                                                                           SEQUENCE OF 25-41.
                                                                                                                                                                                                                                                                                                                                                                                             Mammalia;
                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota;
                                                                                                                                                                                                                                                                                                                                                                                                                      Mus musculus (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                NCBI_TaxID=10090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               28
SURCELLULAR LOCATION: Endoplasmic reticulun
SUBCELLULAR LOCATION: Endoplasmic reticulun
PTM: PHOSPHORYLATED.
SIMILARITY: CONTAINS 2 THIOREDOXIN DOMAINS.
CAUTION: WAS ORIGINALLY THOUGHT TO BE A PHO
BISPHOSPHATE PHOSPHODIESTERASE TYPE I (PHOS
                                                                             interchain disulfide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ε.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VELTEETFNATVMASDS----IVLFYAGWQAVSMAFLQSYIDVAVKLKGTSTMLLTRINC : | | : | | : | | : : : |
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CPHMTEDNKDLIQGKDLLTAYYDVD----YEKNTKGSNYWRNRVMMVAKTFLDA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TANTNTCNKYGVSGYPTLKIFRDGEEAGAYDGPRTADGIVS--HLKKQAGPASVPLRTED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ADWSDVCTKQNVTEFPIIKMYKKGENPVSYAGMLGTKDLLKFIQLNRISYPVNITSIQEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LELTDENFESRVSDTGSAGLMLVEFFAPWCGHCKRLAPEYEAAATRLKG--IVPLAKVDC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FPEITVEN------LPSYFRLQKPLLILFSDGTVNPQYKKAILTLVKQKYLDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DDNGEGITIFRPLHLANKFEDKIVAYTEKKMTSGKIK-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   D----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EEYLSGELYKDLILYSSVSVLGLFSPTMKTAKEDFSEAGNYLKGYV-----ITGIYSEE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                             Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                        Metazoa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -FKKFISDKDASVVGFFRDLFSDGHSEFLKAASNLRDNYRFAHTNVESLVKEY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ã,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -VLLLSTKYAASLPALLLARHTEGKIESIPLASTHAQDIVQIITDALLEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    98
240
476
56623 ,
                                                                                                                                                                       AND
                                                                                                                                                                                                                                                                                                                                                                                            Chordata;
Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3.9%;
                                                                                                                                                                       PHOSPHORYLATION
                                                                             bonds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                  ERP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                56;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S -> T (IN REF. 1).
IKKFIQESI -> SRSLFRF
F -> L (IN REF. 2).
EAC7F0C0BD4F1471 (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 163.5; DB Pred. No. 0.0023
                                                                                                                                                                                                                                                                                                                                                                                            Craniata; Ver
Sciurognathi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRT;
                                                                             'n
                                                                                                                                                                                                                                                                                                                 isozymes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                             microsomal protein) (p58) (ERp57).
                                                                            proteins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         504
                                                    reticulum
                                                                                                                                                                                                                                                                                                                                                                                            Vertebrata;
thi; Muridae;
                                                                                                                                                                                                                                                                                                                 bу
                                                                            ns to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         B
A PHOSPHATIDYLINOSITOL-4,5-
(PHOSPHOLIPASE C-ALPHA).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SRSLFRKA (IN
                                                                                                                                                                                                                                                                                                                 murine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                120;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           υ
                                                                            form
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       μ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                           .3.4.1) (Disulfide
                                                    Lumen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CRC64;
                                                                                                                                                                                                                                                                                                                 w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ----KFIQESIFGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                             the
                                                                                                                                                                                                                                   Selkirk J
                                                                                                                                                                                                                                                                                                                 lymphocytes.";
                                                                                                                                                                                                                                                                                                                                                                                          Euteleostomi;
; Murinae; Mus
                                                  (By similarity).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REF.
                                                                            native
                                                                                                                                                                                                                       proteins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                59;
                                                                                                                                from
                                                                                                                                            ×.
                                                                                                                                                                                                                                       ~
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9;
```

```
PDI_YEAST
                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                              PDI_YEAST STANDARD: PRT; 522 AA. P17967; 01-NOV-1990 (Rel. 16, Created) 01-MAR-1992 (Rel. 21, Last sequence update) 15-JUN-2002 (Rel. 41, Last annotation update) Protein disulfide isomerase precursor (PDI) (1997)
            SEQUENCE FROM N.A., AND PARTIAL STRAIN=X2180-1A, and TM5;
MEDLINE=92105067; PubMed=1761527;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      This SWISS-PROT entry is copyright. It is produced through a collab between the Swiss Institute of Bioinformatics and the EMBL outset the European Bioinformatics Institute. There are no restrictions use by non-profit institutions as long as its content is in modified and this statement is not removed. Usage by and for commodified and this statement is not removed. Usage by and for commodified and this statement is not removed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TIGREAMS; TIGRO11136; pdi.dom; 2.
TIGREAMS; TIGRO1130; ER_PDI_fam; 1.
PROSITE; PS00194; THIOREDOXIN; 2.
Redox active center; Isomerase; End.
                                                                                             Saccharomyces cerevisiae (Baker's yeast).
Eukaryota; Fungi; Ascomycota; Saccharomycotina; Saccharomycetes;
                                                                                                                        related glycoprotein 1).
PDI1 OR MFP1 OR TRG1 OR YCL043C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pfam; pF00085; thiored; 2. PRINTS; PR00421; THIOREDOX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MGD; MGI:95834; Grp58
InterPro; IPR000063; 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL; M73329; AAA39944.1; -. HSSP; P07237; 1MEK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      entities requires a license agreement or send an email to license@isb-sib.ch
                                                                    NCBI_TaxID=4932;
                                                                                Saccharomycetales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Phosphorylation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SWISS-2DPAGE;
                                                                                                                                                                                                                                                                                                                      603
                                                                                                                                                                                                                                                                                                                                                 191
                                                                                                                                                                                                                                                                                                                                                                                                                                 492
                                                                                                                                                                                                                                                                                                                                                                                                      143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       432
                                                                                                                                                                                                                                                                                            250
                                                                                                                                                                                                                                                                                                                                                                                                                                                            85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 28
                                                                                                                                                                                                                                                                                                                      N---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VELTEETFNATVMASDS----IVLFYAGWQAVSMAFLQSYIDVAVKLKGTSTMLLTRINC
                                                                                                                                                                                                                                                                                            NKDLIQGKDLLTAYYDVD-----YEKNAKGSNYWRNRVMMVAKKFLDA
                                                                                                                                                                                                                                                                                                                                                              LLSTKYAASLPALLLAR--HTEGKIESIPLASTH----AQDIVQIITDALLEMFPEITVE
                                                                                                                                                                                                                                                                                                                                                                                                      E----
                                                                                                                                                                                                                                                                                                                                                                                                                                EEYLSGELYKDLILYSSYSYLGLFSPTMKTAKEDFSEAGNYLKG---YVITGIYSEEDVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                            TANTNTCNKYGVSGYPTLKIFRAGEEAGAYDGPRTADGIVS - - HLKKQAGPASVPLRTEE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADWSDVCTKQNVTEFPIIKMYKKGENPVSYAGMLGTKDLLKFIQLNRISYPVNITSIQEA 491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LELTDENFESRVSDTGSAGLMLVEFFAPWCGHCKRLAPEYEAAATRLK---IVPLAKVDC
                                                                                                                                                                                                                                                                                                                                                -LVKEYDDNGEGITIFRPLHLANKFEDKTVAYTEKKMTSAKIKKFIQDSIFGLCPHMTED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     63;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   25
57
405
501
                                                                                                                                                                                                                                                                                                                                                                                                      -FKKFISDKDASVVGFFRDLFSDGHSEFLKAASNLRDNYRFAHTNIES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            P27773;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AA;
                                                                                                                                                                                                                                                                                                                    LPSYFRLQKPLLILFSDGTVNPQYKKAILTLVKQKYLDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       THIOREDOXIN.
                                                                                  Saccharomycetaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   504
60
408
504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          56621 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Thiored
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MOUSE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  55;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REDOX-ACTIVE (BY SIMILARITY).
REDOX-ACTIVE (BY SIMILARITY).
PROVENT SECRETION FROM ER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (BY SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PROTEIN DISULFIDE ISOMERASE

    Endoplasmic reticulum; Repeat; Signal;

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          59B3B04755CEB7B4 CRC64;
                                                                                                                           OR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                          SEQUENCE
Y.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ອ 162;
ກາ. 0.f
                                                                                                                          YCL43C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (See http://www.isb-sib.ch/announce/
                                                                                   Saccharomyces
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DВ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .0029
                                                                                                                          OR
                                                                                                                                                      (EC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      125;
                                                                                                                           YCL313
                                                                                                                                                       5.3.4.1)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                      642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A
                                                                                                                                                       (Thioredoxin-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      46;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             commercial
                                                                                                                                                                                                                                                                                                                                                                                                       190
                                                                                                                                                                                                                                                                                                                                                                                                                                 548
                                                                                                                                                                                                                                                                                                                                                                                                                                                            142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            431
                                                                                                                                                                                                                                                                                                                                                 249
                                                                                                                                                                                                                                                                                                                                                                              602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          way
```

```
the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE-92397595; PubMed-1523890; Scherens B., Messenguy F., Gigot D., Dubois E.; "The complete sequence of 4,443 bp segment on chromosome III reveals five open reading frames and the protein disulfide isomerase."; Yeast 8:577-586(1992).
                                                                                        EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mizunaga T.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE-91289690; PubMed=2063627;
Scherens B., Dubois E., Messenguy
"Determination of the sequence of
Chromosome III. Homology with the
                                                                                                                                                                                                                                                                                                                                                                                                   This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Montogomery D., Ellis R.W., F
"Protein disulfide isomerase
Saccharomyces cerevisiae.";
Gene 108:81-89(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "The Saccharomyces cerevisiae TRG1 gene encodes a lumenal endoplasmic reticulum maturation of vacuolar carboxypeptidase. J. Biol. Chem. 266:24557-24563(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Guenther R., Braeuer C
Lehle L., Kuentzel H.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene
                                                                                                                                                                                                                                                                                        entities
                                                                                                                                                                                                                                                                                                                 modified
                                                                                                                                                                                                                                                                                                                                     use
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Farquhar R., Honey N., Murant S.J., Bossier P., Schultz Montogomery D., Ellis R.W., Freedman R.B., Tuite M.F.; "Protein disulfide isomerase is essential for viability
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE=92104510; PubMed=1761235;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A. MEDLINE=92105117;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     are
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  disulfide isomerase that is es
J. Biochem. 110:306-313(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "Molecular structure of a yeast gene, disulfide isomerase that is essential
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       "Glycosylation site binding
                                                                                                                                                                                                                                                                   send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                          SUBCELLULAR LOCATION: Endoplasmic reticulum PTM: The N-terminus is blocked.
SIMILARITY: CONTAINS 2 THIOREDOXIN DOMAINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EUNCTION: PARTICIPATES IN THE FOLDING OF PROTEINS CONDISULFIDE BONDS, MAY BE INVOLVED IN GLYCOSYLATION, PHYDROXYLATION AND TRIGLYCREIDE TRANSFER. CATALYTIC ACTIVITY: Rearrangement of both intrachain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            identical and
c. Natl. Acad.
JX0182;
S19372;
S15050;
S25349;
                                                                                                                                                                                                                                                                                                                                                        European
                                                                                    X52313; CAA36550.1; X527112; CAA40883.1; X57712; CAA40883.1; AAA34848.1; AAA34848.1; AAA34848.1; AAA35169.1; X59720; CAA42373.1; X54535; CAA38402.1; AAA00723.1; AAA000723.1; AAA00723.1; AAA000723.1; AAA00723.1; AAA00723.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                structures
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ermination of the sequence of the yeast YCL313 gene localized mosomer III. Homology with the protein disulfide isomerase (PDI product) of other organisms.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  interchain disulfide
                                                                                                                                                                                                                                                                                                                            SWISS-PROT entry is copyright. It is produced through a collaboration sen the Swiss Institute of Bioinformatics and the EMBL outstation burden Bioinformatics Institute. There are no restrictions on its by non-profit institutions as long as its content is in no way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       7:185-193(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   the Swiss Institute of Bioinformat pean Bioinformatics Institute. The non-profit institutions as long and this statement is not removed. requires a license agreement (See
  ISBYSS.
S19372.
S15050.
S25349.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PubMed=1761554;
uer C., Janetzky
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          essential for Sci. U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  bonds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            protein and protein disulfide
for cell viability in yeast.";
A. 88:4453-4457(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                н.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                proteins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Kaplan H.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       reticulum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Foerster H.H.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PDI1, encoding protein for cell growth.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      e is essential n glycoprotein e.";
                                                                                                                                                                                                                                                                                     http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ç
                                                                                                                                                                                                                                                                                                          Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  form
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       lumen (Potential).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       disulfide isomerase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             including
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    the left arm
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Lennarz
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  the
                                                                                                                                                                                                                                                                                                            bу
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        for growth involved in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ehbrecht I.M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CONTAINING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  native
                                                                                                                                                                                                                                                                                                               and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             glucokinase
                                                                                                                                                                                                                                                                                                          for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     and
n the
                                                                                                                                                                                                                                                                                                               commerc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9
```

```
Qy
                                                                                                        δÃ
                                                                                                                                                                                δÃ
                                                                                                                                                                                                                      Db
                                                                                                                                                                                                                                                         Qy
                                                                                                                                                                                                                                                                                              Вb
                                                                                                                                                                                                                                                                                                                               Qy
밁
                                                                     g
                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CONFLICT
CON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DISULFID
DISULFID
CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CARBOHYD
SITE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Redox-active
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRINTS; PRO0421; THIOREDOXIN.
TIGREAMS; TIGR01126; Pd1_dom; 2.
TIGREAMS; TIGR01130; ER_PDI_fam;
PROSITE; PS00014; ER_TARGET; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  HSSP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pfam; PF00085; thiored;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      InterPro; IPR000886; ER_target.
InterPro; IPR000063; Thiored.
                                  646
276
                                                                       227
                                                                                                          592
                                                                                                                                               186
                                                                                                                                                                                    534
                                                                                                                                                                                                                        135
                                                                                                                                                                                                                                                           474
                                                                                                                                                                                                                                                                                                                                   416
                                                                                                                                                                                                                                                                                                                                                                                                           358 VAETVFRDRKRKLPLE-LTVELTEETFNATVMASDSIVL-FYAGWQAVSMAFLQSYIDVA
                                                                                                                                                                                                                                                                                              76
                                                                                                                                                                                                                                                                                                                                                                        16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JS0634; J
; P07237;
                                CWLNL--KNTPVGRGIL
                                                                                                          LLEMFPE-ITVENLPSYFRLQKPLLILFSDGTVNPQYKKAILTL-----VKQKYLDSFTP
                                                                                                                                                                                                                                          VKLKGTSTMLLTRINCADWSDVCTKQNVTEFPIIKMYKKGE--NPVSYAGMLGTKDLLKF
                                                                                                                                                                                                                                                                                                                                                                      LASSVFAQQEAVAPEDSAVVKLATDSFNEYIQSHDLVLAEFFAPWCGHCKNMAPEYVKAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S0000548; PDI1
LETELAKKN---
                                                                     -- DVFEKWLQVEALPYFGEI-
                                                                                                                                                 NDYDFVSAENADDDFKLSIYLPSAMDEPVVYNGKKAD
                                                                                                                                                                                    KGYVITGIYSEEDVLLLSTKYAASL--PALLLARHTEGKIESIPLASTHAQDIVQIITDA
                                                                                                                                                                                                                        --MIKQSQPA-VAVVADLPAYLANETFVTPVIVQSGKIDADFNATF----YSMANKHF
                                                                                                                                                                                                                                                                                              ETLV-EKNITLAQIDCTENQDLCMEHNIPGFPSLKIFKNSDVNNSIDYEGPRTAEAIVQF
                                                                                                                                                                                                                                                                                                                                                                                                                                               l Similarity
66; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         522
                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    168
197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JS0634.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    29
61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          center;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ER_TARGET; 1.
THIOREDOXIN; 2.
RGLM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    28
522
64
409
82
117
1174
425
522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          83
114
143
146
1168
1197
2215
2215
233
333
351
455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         58227
                                                                                                                                                                                                                                                                                                                                                                                                                                                               3.7%;
                                  660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ¥.
                                                                                                                                                                                                                                                                                                                                                                                                                                               67;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     I > V (IN REF. 4).
S -> R (IN REF. 4).
V -> S (IN REF. 4).
MISSING (IN REF. 4).
K -> E (IN REF. 3).
D -> E (IN REF. 3).
V -> R (IN REF. 1).
A -> V (IN REF. 1).
E -> S (IN REF. 3).
I -> F (IN REF. 3).
I -> F (IN REF. 3).
I -> S (IN REF. 3).
G -> S (IN REF. 3).
G -> S (IN REF. 3).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 154.5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ISLSWPPTLSMNTFSRTTWW (I -> V (IN REF. 4).
S -> R (IN REF. 6).
V -> S (IN REF. 4).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    N'LINKEU (GLCNAC...)
PREVENT SECRETION FROM
AVVKLATDSFNEYIQSHDLV -:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     N-LINKED (GLCNAC. . .) (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PROTEIN DISULFIDE ISOMERASE.
REDOX-ACTIVE (BY SIMILARITY)
REDOX-ACTIVE (BY SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OR 22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -> AEADAEAEA (IN 69CF3E05D7F74C94
                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Endoplasmic reticulum; Repeat;
                                                                       DGSVFAQYVESGLPLGYLFYNDEEELEEYKP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .0094;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                               126;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length
                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (IN REF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ER.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    522;
                                                                                                                                                                                                                                                                                                                                                                                                                                               58;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Signal.
                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                          645
                                                                                                                                                                                    591
                                                                                                                                                                                                                                                                                                                                                                      75
                                                                                                                                                                                                                                                                                                                                                                                                           415
                                                                                                                                                                                                                      185
                                                                                                                                                                                                                                                                                              134
                                                                                                                                               226
                                                                                                                                                                                                                                                                                                                                                                                                                                               15;
```

RESULT 11 BS2_TRYBB ID BS2_T AC P1286

BS2_TRYBB P12865;

STANDARD;

PRT;

497 AA

```
B
                                                                                                                                                                                  Q
                                                                                                                                                                                                                               В
                   õ
                                                            밁
                                                                                                  Ś
                                                                                                                                                                                                                                                                 Q
                                                                                                                                                                                                                                                                                                                                                                                                  STITE TO CONTRACT TO THE STITE OF THE STITE 
                                                                                                                                                                                                                                                                                                              Query Match
Best Local S
Matches 77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-OCT-1989
01-OCT-1989
01-OCT-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                         CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DISULFID
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRINTS; PRO0421; THIOREDOXIN. TIGRFAMS; TIGR01126; pdi_dom;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL; J02865; AAA30168.1;
PIR; A32820; A32820.
HSSP; P07237; 1MEK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Biochemistry:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE-90001196; PubMed-2551375;
Hsu M.P., Muhich M.L., Boothroyd J.C.;
"A developmentally regulated gene of tr
of rat protein-disulfide isomerase and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Euglenozoa;
NCBI_TaxID=5702;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Redox-active
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PROSITE; PS00194; THIOREDOXIN;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 entities requires
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      modified and this statement is not removed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Trypanosoma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bloodstream-specific
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -!- SIMILARITY: CONTAINS
                                                              125
                                                                                                      483
                                                                                                                                                                                      423
                                                                                                                                               70
                                                                                                                                                                                                                                 21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                send
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ween the Swiss Institute of Bioinformatics and the E
European Bioinformatics Institute. There are no rest
by non-profit institutions as long as its content
                                                                                                                                                                                                                                                                     TVELTEETFNATVMASD-SIVLFYAG-------WQAVSMAFLQSYIDVAVKLKGTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SWISS-PROT entry is copyright. It is produced through a collaboration
                                                                                                                                                                                                                            SLKLTKENFNETIAKSEIFLVKFYVDTCGYCQMLAPEWEKAA----NETIDNA----
                                                              PAVTPASNAEEVTRAKEEHDVV
                                                                                                    VNITSIQEAEEYLSGELYKDLILYSSVSVLGLFSPTMKTAKEDFSEAGNYLKGYVITGIY
                                                                                                                                                                                    TMLLTRINCADWSDVCTKQNVTEFPIIKMYKKGENPVSYAGMLGTKDLLKFIQLNRISYP
                                                                                                                                             -- LMGEVDCHSQPELAANFSIRGYPTIILFRNGKEAEHYGGARTKDDIIKYIKAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PF00085; thiored;
                                                                                                                                                                                                                                                                                                              . Similarity
77; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         s requires a license agreement (See http://www.isb-sib.ch/announce/an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ipr000063; Thiored
0085; thiored; 3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (Rel.
(Rel.
(Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               brucei brucei
                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        center;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       28:6440-6446(1989).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TON
                                                                                                                                                                                                                                                                                                                                                                                                AA;
                                                                                                                                                                                                                                                                                                                                                                                         14
497
51
381
30
63
85
154
250
278
413
465
476
482
488
55579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KNOWN
                                                                                                                                                                                                                                                                                                                               3.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      isomerase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Created)
Last sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Kinetoplastida; Trypanosomatidae; Trypanosoma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2 THIOREDOXIN DOMAINS
                                                                                                                                                                                                                                                                                                                                                                                                Œ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .•
                                                                                                                                                                                                                                                                                                                                                                                                            REDOX-ACTIVE (BY SIMILARITY).
REDOX-ACTIVE (BY SIMILARITY).
N'LINKED (GLCNAC...) (POTENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sequence u
                                                                                                                                                                                                                                                                                                              76;
                                                                                                                                                                                                                                                                                                            Score 147; DB
Pred. No. 0.02
76; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BLOODSTREAM-SPECIFIC PROTEIN
                                                            ---CVGLTANNSTSLSTTLAEAAQSFR-----
                                                                                                                                                                                                                                                                                                                                                                                                8AE6C44D762B67EB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     precursor.
LARHTEGKIESIPLASTHAQDIVQIITDALLEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Endoplasmic reticulum;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              trypanosomes encodes a homologue d phosphoinositol-phospholipase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         update)
                                                                                                                                                                                                                                                                                                                                 DB 3
                                                                                                                                                                                                                                                                                                                                                     1;
                                                                                                                                                                                                                                                                                                                158;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  and the EMBL
                                                                                                                                                                                                                                                                                                                                                Length 497;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (POTENTIAL).
(POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (POTENTIAL).
(POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    bу
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                   (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                            (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Repeat;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        and
                                                                                                                                                                                                                                                                                                              ; 88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        for
                                                                                                                                             ---VG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ij
                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          commercia
                                                                                                                                                                                                                                                                     422
                                                            170
                                                                                                                                             124
                                                                                                                                                                                      482
                                                                                                                                                                                                                               69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             on
S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            no
                                                                                                                                                                                                                                                                                                              16;
```

```
₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                       RA COllins M., Connor R., Cronin A., Davis P., Feltwell T., Fraser A.,
RA Gentles S., Goble A., Hamlin N., Harris D., Hidalgo J., Hodgson G.,
RA Holroyd S., Hornsby T., Howarth S., Huckle E.J., Hunt S., Jagels K.,
RA Holroyd S., Hornsby T., Howarth S., Huckle E.J., Hunt S., Jagels K.,
RA James K., Jones M., Leather S., McDean J.,
RA Oliver K., O'Neil S., Pearson D., Quail M.A., Rabbinowitsch E.,
RA Mooney P., Moule S., Mungall K., Murphy L., Niblett D., Odell C.,
RA Mooney P., Moule S., Mungall K., Murphy L., Niblett D., Odell C.,
RA Mooney P., Moule S., Mungall K., Murphy L., Niblett D., Odell C.,
RA Mylerford K., Taylor R.G., Tivey A., Walsh S.V., Warren T., Whitehead S.,
RA Taylor K., Taylor R.G., Tivey A., Walsh S.V., Warren T., Whitehead S.,
RA Skelton J., Simmonds M., Squares R., Squares S., Stevens K.,
RA Taylor K., Taylor R.G., Tivey A., Walsh S.V., Warren T., Whitehead S.,
RA Woodward J., Volckaert G., Aert R., Robben J., Grymonprez B.,
RA Weltjens I., Vanstreels E., Rieger M., Schaefer M., Mueller-Auer S.,
RA Weltjens I., Vanstreels E., Rieger M., Schaefer M., Mueller-Auer S.,
RA Weltjens I., Vanstreels E., Rieger M., Schaefer M., Mueller-Auer S.,
RA Gabel C., Fuchs M., Fritzc C., Holzer E., Moestl D., Hilbert H.,
RA Eger P., Zimmermann W., Wedler H., Wambutt R., Purnelle B.,
RA Goffeau A., Cadieu E., Dreano S., Gloux S., Lelaure V., Mottier S.,
RA Galibert F., Aves S.J., Xiang Z., Hunt C., Moore K., Hurst S.M.,
RA Galibert F., Aves S.J., Xiang Z., Hunt C., Moore K., Hurst S.M.,
RA Galibert F., Aves S.J., Xiang Z., Hunt C., Moore K., Hurst S.M.,
RA Galibert F., Aves S.J., Xiang Z., Hunt C., Moore K., Hurst S.M.,
RA Galibert F., Aves S.J., Xiang Z., Hunt C., Moore K., Hurst S.M.,
RA Galibert F., Aves S.J., Xiang Z., Hunt C., Moore K., Hurst S.M.,
RA Galibert F., Jowe T., McCombie W.R., Paulsen I., Potashkin J.,
RA Dominguez A., Esequence of Schizosaccharomyces pombe.";
RT "The genome sequence of Schizosaccharomyces pombe.";
RT "The genome sequence of Schizosaccharomyces pombe.";
RT Hunt G., Hunt G., Hu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q10057;
01-FEB-1996
01-FEB-1996
15-JUN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ul-FEB-1996 (Rel. 33, Last sequence up 15-JUN-2002 (Rel. 41, Last annotation Putative protein disulfide isomerase C SPACIF5.02.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Wood V., Gwilliam R., Rajandream M.A., Lyne M., Lyne R., Stewar Sgouros J., Peat N., Hayles J., Baker S., Basham D., Bowman S., Brooks K., Brown D., Brown S., Chillingworth T., Churcher C.M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                _SCHPO
                                 between the Swiss Institute of Bioing the European Bioinformatics Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Schizosaccharomycetales;
Schizosaccharomyces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE=21848401; PubMed=11859360;
Wood V., Gwilliam R., Rajandream M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NCBI_TaxID=4896;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota; Fungi; Ascomycota;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Schizosaccharomyces
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PDI1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       706
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    224
                                                                                                                                SIMILARITY: CONTAINS
                                                                                                                                                  SUBCELLULAR LOCATION: Endoplasmic reticulum
                                                                                                                                                                                            interchain disulfide
                                                           SWISS-PROT entry is copyright. It is produced through en the Swiss Institute of Bioinformatics and the EM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAGRVEPTIKSLPV----PEVETVDGKTTIVAKTMQK 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EAG-LENHITILPAQEWKPPLPAYDFLSMIDAATSQR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGEITPENYQYYSVIKRPYGWAMVKPNETASIELKES-LTEVGKKMRSHMVVLWVNISKH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FPEITVENLPSYFRLQKPL--LILFSDGTVNPQYKKAILTLVKQKYLDSFTPCWLNLKNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SCHPO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PVGRGILRAYFDPLP---PLPLLVLVN-----LHSGGQVFAFPSDQAIIEENLVLWLKKL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -----VSLKFFEAEPKLFPDEKPETIVVYRKGGEKEVYDGPMEVEKLTEFLQISRVAF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GVPEDAKYPAFLAIHWGANYLHSTAEV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           33, Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     pombe (Fission yeast).
                                                                                                                              N
                                                                                                                                                                                              bonds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Schizosaccharomycetaceae;
                                                                                                                                THIOREDOXIN DOMAINS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Schizosaccharomycetes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRT;
                                                                                                                                                                                            in
                                                                                                                                                                                            proteins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               on update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         492
                                       There are no restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         À
                                                                                                                                                                                              to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               precursor
                                                                                                                                                                                              form
                                                                                                                                                  lumen
                                                                                                                                                                                              the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -VTRESLEKFILEF
                                                                                                                                                  (Ву
                                                                                                                                                                                              native
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (EC
                                                                EMBL outstation
                                                                                                                                                    similarity).
                                                                  a collaboration -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5.3.4.1).
                                                                                                                                                                                                                                                                                                                                                                                                                                   Thode G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            705
                                            on
```

use by modified

non-profit and this s

institutions

as

long

as

its content

and

for

'n

õ

```
RESULT 13
PDA4_RAT
ID PDA4
AC P3865
DT 01-FE
DT 01-FE
DT 16-OC
                                                                                 В
                                                                                               Š
                                                                                                                      DЬ
                                                                                                                                  δõ
                                                                                                                                                     В
                                                                                                                                                                       Qy
                                                                                                                                                                                             DЬ
                                                                                                                                                                                                          δõ
                                                                                                                                                                                                                            Дb
                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                     Ъ
                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                     Ъ
                                                                                                                                                                                                                                                                                                                         Qγ
                                                                                                                                                                                                                                                                                                                                              Ъ
                                                                                                                                                                                                                                                                                                                                                            QΥ
                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
PDA4_RAT
P38659;
01-FEB-1995
01-FEB-1995
16-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                        SITE
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DISULFID
DISULFID
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRINTS; PR00421; THIOREDOXIN.
TIGREAMS; TIGR011126; pd1 dom; 2.
TIGREAMS; TIGR011130; ER_PDI_fam;
PROSITE; PS00014; ER_TARGET; 1.
PROSITE; PS00194; THIOREDOXIN; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL; 268136;
HSSP; P07237;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Endoplasmic reticulum;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Hypothetical protein; Redox-active center;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pfam; PF00085; thiored; 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               InterPro; IPR000886; ER_target.
InterPro; IPR000063; Thiored.
                                                                                  415
                                                                                                                                                           334
                                                                                                                                                                            313
                                                                                                                                                                                                                 259
                                                                                                                                                                                                                                  230
                                                                                                                                                                                                                                                    231
                                                                                                                                                                                                                                                                       177
                                                                                                                                                                                                                                                                                         171
                                                                                                                                                                                                                                                                                                          140
                                                                                                                                                                                                                                                                                                                            111
                                                                                                                                                                                               287
                                                                                                                                                                                                                                                                                                                                               89
                                                                                                                                                                                                                                                                                                                                                                                 41
                                                                                                                                                                                                                                                                                                                                                                 70
                                                                                                                                                                                                                                                                                                                                                                                                  15 VIMCIFYMPTVNSLPELSPQKYFSTLQPGLEELNEAVRPLQDYGISVAKVNCVKE----
                                                                                                                                                                                                                                                                                                                                                                                 VLMVKFYAPWCGHCKALAP------EYESAADELEKDGISLVEVDCTEEGDLCS
                                                                                                   CADWSDVCTKQNVTEFPIIKMYKKGE--NPVSYAGMLGTKDLLKFIQLNRISYPV
                                                                                                                                    ELTVELTEETFNATVM--ASDSIVLFYAGWQAVSMAFLQSYIDVAVKLKGTSTMLLTRIN
                                                                                                                                                           G--
                                                                                                                                                                                                                                             APLLTEVAEDPQQVSTVHLQLGLPLVFI------
                                                                                                                                                                                                                                                                                                                           VLFALLFSEVKYITNLEDLQNIENALKGKANIIFSYVRAIGIPEHRAVMEAGFVYGTTYQ
                                                                                 ATE-NDISV--SISGFPTIMFFKANDKVNPVRYEGDRTLEDLSAFIDKHASFEPI
                                                                                                                                                                          PVEFLVLHDVDLIISHVENNMHIEEIQEDEDNDMEGPDIDVQDDEVAETVFRDRKRKLPL
                                                                                                                                                                                              AVRYGAVAKQMNVESD-----WPAF-----VIANLKSMLKYPFP-TTELTAKAMTKFV
                                                                                                                                                                                                                                 IPLLDEL---NOMTFGKYQQSGLPLGIIFYNSTESRDELYDVFQPLAKKYQDTLRFAFLD
                                                                                                                                                                                                                                                                      FAASDDKELAKSLGS---NFPGIVAF----TKDAAQDSDKLVYTGDWDPASIADFIGVSS
                                                                                                                                                                                                                                                                                       FVLTTEIALLESIGSEDVEYAHLYFFHCKLVLDLTQQCRRTLMEQPLTTLNIHLFIKTMK
                                                                                                                                                                                                                                                                                                                                             EYSIRGYPTLNVFKNGKQISQYSGPRKHDALVKYMRKQLLPTVKPISKDTL------
                                                                                                                     --LVVLVADNFDDIVMDETKDVLVEFYAPWCGHCKNLAPTYEKLAEEYSDDSNVVVAKID
                                                                                                                                                                                                                                                                                                                                                                                                                      103;
                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                        - VSQQATYEADRRTAEWYAWRLLGKAGYLLLLRDSLEVNIPQDANYVFKRAEEGY
                                                                                                                                                                                                                                                                                                                                                                                                                                                        489
492
(Rel.
(Rel.
(Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          51
385
161
257
                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       23
                                                                                                                                                                                                                                                                                                          ENFVEKADDLAVVAFFKDQKLNDTYT
                                                                                                                                                                                                                                                                                                                                                                                                                                                         AA;
                                     STANDARD;
                                                                                                                                                          DFVDGKLQPKIKSQPIPESQED--
31,
31,
40,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   54
388
161
257
492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       492
                                                                                                                                                                                                                                                                                                                                                                                                                              3.5%;
19.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                        54880 MW;
                                                                                                                                                                                                                                                                                                                                                       -EISRYCGKEK-DLMKAYLFKGNI-LLREFPTDTLFDVNAIVAH
Created)
Last sequence up
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Repeat; Signal.
POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                   71;
                                                                                                                                                                                                                                                                                                                                                                                                                     Pred. No. 0.02
1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                        N-LINKED (GLCNAC. . .) (POTENTIAL).
N-LINKED (GLCNAC. . .) (POTENTIAL).
PREVENT SECRETION FROM ER (POTENTIAL).
C50B59236566667 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REDOX-ACTIVE (BY SIMILARITY)
REDOX-ACTIVE (BY SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 146.5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                C1F5.02
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PUTATIVE PROTEIN
       update)
                                     643
                                                                                                                                                                                                                                                                                                                                                                                                                               .029
                                    B
                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Isomerase
                                                                                                                                                                                                                                                                                                                                                                                                                      186;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DISULFIDE
                                                                                                                                                                                                                                                                                                         EVAEVMKDDFV-----
                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 492;
                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ISOMERASE
                                                                                                                                                                                                                                                                                                                                                                                                                      175;
                                                                                  466
                                                                                                   483
                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                         430
                                                                                                                                                                                                                                                                                                                            170
                                                                                                                      414
                                                                                                                                                                            372
                                                                                                                                                                                                                                  286
                                                                                                                                                                                                                                                                                                          176
                                                                                                                                                                                                                                                                                                                                               139
                                                                                                                                                                                                                                                                                                                                                                                 88
                                                                                                                                                                                                                                                                                                                                                                                                   69
                                                                                                                                                          356
                                                                                                                                                                                              333
                                                                                                                                                                                                                                                   258
                                                                                                                                                                                                                                                                      229
                                                                                                                                                                                                                                                                                        230
                                                                                                                                                                                                                                                                                                                                                                                                                      20;
                          Ω
                                             Dр
                                                              δÃ
                                                                                 밁
                                                                                                 Qy
                                                                                                                      В
                                                                                                                                      Ş
```

```
Query Match
Best Local :
                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                   DISULFID
DISULFID
DISULFID
SITE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   This SWISS-PROT entry is copyright. It is produced through a chetween the Swiss Institute of Bioinformatics and the EMBL the European Bioinformatics Institute. There are no restrict most by non-profit institutions as long as its content is modified and this statement is not removed. Usage by and fo entitles requires a license agreement (See http://www.isb-sib.or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -1- C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRINTS; PRO0421; THIOREDOXIN.
TIGREAMS; TIGR01126; pdi_dom; 3.
TIGREAMS; TIGR01130; ER_PDI_fam; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STRAIN-Wistar; TISSUE-Liver; MEDLINE-93238767; PubMed-8477750; Van P.N., Rupp K., Lampen A., Soe
                                                                                                                                                                                                                                                                                                                                                     SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                           SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Glycoprotein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL; M86870;
HSSP; P07237;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         activity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota; Metazoa; Chordata; Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Rattus norvegicus (Rat).
                                                                                                                                                                                                                                                                                                                                                                                                                                          CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Redox-active center; Isomerase; Endoplasmic reticulum;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEROPS; C17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            "CaBP2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PDIA4 OR CABP2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Protein disulfide isomerase A4 precursor (EC 5.3.4.1) (Protein ERp-72) (Calcium-binding protein 2) (CaBP2).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro;
351
                                  184
                                                                    291
                                                                                                       129
                                                                                                                                         237
                                                                                                                                                                                                             194
                                                                                                                                                                          75
                                                                                                                                                                                                                                 15 VIMCIFYMPTVNSLPELSPQKYFSTLQPGLEELNEAVRPLQDYGISVAKVNCVKEEISRY
:|: || | :||: | :||:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STRUCTURES.
SUBCELLULAR LOCATION: Endoplasmic reticulum INDUCTION: UPON GLUCOSE STARVATION, AS WELL TUNICAMYCIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PTM: O-GLYCOSYLATED.
SIMILARITY: CONTAINS 3 THIOREDOXIN DOMAINS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CATALYTIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       interchain disulfide
                                                                                                                                                                                                             IILVEFYAPWCGHCKKLAPE-----YEKAAKELSKRSPP-----IPLAKVDAT---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       J. Biochem. 213:789-795(1993)
CATALYTIC ACTIVITY: Rearrangem
                                GSEDVEYAHLYFFHCKLVL------DLTQQCRRTLMEQPLTT--LNIHLFIKTMKAPLL-
                                                                                                                                        -- EQTDLAKRFDVSGYPTLKIFRKGRPFDYNGPREKYGIVDYMVEQSGPPSKEILT----
                                                                                                                                                                        CGKEKDLMKAYLFKGNILLREFPTDTLFDVN-----AIVAHVLFALLFSEVKYITNLED
                                                                                                   LQNIENALK-GKANIIFSYVRAIGIPEHRAVMEAGFVYGTTYQF--VLTTEIA--LLESI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pro; IPR000886; ER_target.
Pro; IPR000063; Thiored.
PF00085; thiored; 3.
                                                                   LKQVQEFLKDGDDVVILGVFQGVGDPGYLQYQDAANTLREDYKFHHTFSTEIAKFLKVSL
                                                                                                                                                                                                                                                                                  al Similarity
115; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      N., Rupp K., Lampen A., Soeling is a rat homolog of ERp72 with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PS00014; ER_TARGET;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PS00194; THIOREDOXIN;
                                                                                                                                                                                                                                                                                                                                                     643
                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                    20
21 643
39 92
207
556
643
72806 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Calcium-binding.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1MEK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAA19217.1;
KLVLMQPEKFQSKYEPRMHVMDVQGSTEASAIKDYVVKHDLPLVG
                                                                                                                                                                                                                                                                                                3.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Rearrangement of
e bonds in proteir
                                                                                                                                                                                                                                                                                76;
                                                                                                                                                                                                                                                                          Pred. No. U.Ut
6; Mismatches
                                                                                                                                                                                                                                                                                                               Score 142;
                                                                                                                                                                                                                                                                                                                                                                   REDOX-ACTIVE (BY SIMILARITY).
REDOX-ACTIVE (BY SIMILARITY).
REDOX-ACTIVE (BY SIMILARITY).
PREVENT SECRETION FROM ER.
                                                                                                                                                                                                                                                                                                                                                                                                                                          PROTEIN DISULFIDE ISOMERASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                            POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Craniata; Veri
Sciurognathi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ω
                                                                                                                                                                                                                                                                                                                                                     85611B66F3A4DE41 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   proteins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        H.-D.;
proteindisulfide isomerase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Vertebrata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     both
ns to
                                                                                                                                                                                                                                                                                                  .086;
                                                                                                                                                                                                                                                                                                                      DB
                                                                                                                                                                                                                                                                                                                  1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Muridae;
                                                                                                                                                                                                                                                                                  201;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       intrachain
form the na
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AS TREATMENT
                                                                                                                                                                                                                                                                                                               Length
                                                                                                                                                                                                                                                                                  Indels 112;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Euteleostomi;
; Murinae; Rattus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          restrictions
                                                                                                                                                                                                                                                                                                                    643;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Repeat;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       native
                                                                                                                                                                                                                                                                                                                                                                                                                                          A4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HTIW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Signal;
                                                                                                                                                                                                                                                                              Gaps
                                                                                                     183
                                    234
                                                                                                                                                                          128
 396
                                                                      350
                                                                                                                                         290
                                                                                                                                                                                                             236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          on
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            way
                                                                                                                                                                                                                                                                                   27;
```

```
PDA4_HUMAN
ID PDA4_H
PDA4_H
PDA4_H
PDA4_H
PDA4_H
AC P13667
AC P13607
DT 01-MAY
DT 01-MAY
DT 15-JUN
DT 15-JUN
DT 01-MAY
OC HUMAN
ID POID44
OS HOMO S
OC EUKARY
OC MARMANI
OX NCBL_T
RN [1]
RP SEQUEN
RX MEDLIN
RA HUANG
RI J. Bio
RN [3]
RP REVISI
RX MEDLIN
RA HUANG
RA SEQUEN
RC [3]
IN [4]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            γQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ϋ́
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PDA4_HUMAN
P13667;
                                                                                                                                                                                          use by non-profit institutions as long as its content modified and this statement is not removed. Usage by an
                                                                                                                                                                                                                                    This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the Entre European Bioinformatics Institute. There are no restitute the European Bioinformatics Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Submitted (JUL-2001) to the EMBL/GenBank/DDBJ
-!- CATALYTIC ACTIVITY: Rearrangement of both
interchain disulfide bonds in proteins to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TISSUE=Lung, and Muscle;
Strausberg R.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE=91161636; PubMed=2002068; Huang S.-H., Tomich J.M., Wu H., Jo J. Biol. Chem. 266:5353-5353(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Huang S.-H., Tomich J.M., Wu H., Jong A., Holcenberg J.S.; Human deoxycytidine kinase. Sequence of cDNA clones and ana expression in cell lines with and without enzyme activity."; J. Biol. Chem. 264:14762-14768(1989).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-JAN-1990 (Rel. 13, Created)
01-MAY-1991 (Rel. 18, Last sequence up
15-JUN-2002 (Rel. 41, Last annotation
Protein disulfide isomerase A4 precurs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Strausberg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A., AND PARTIAL S MEDLINE-89359272; PubMed-2549034;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Metazoa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REVISIONS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (ERp72)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         235
                                                                                                                                           send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                       SUBCELLULAR LOCATION: Endoplasmic reticulum SIMILARITY: CONTAINS 3 THIOREDOXIN DOMAINS. CAUTION: WAS ORIGINALLY (REF.1) THOUGHT TO E
                                                                                                                                                                                                                                                                                                                                                                                                                                      structures
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    E--NPVSYAGMLGTKD---LLKFI 474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QDDEVAETVFRDRKRKL - - -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DKKNPIKFEG - - GNRDLEHLSKFI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   YAGWQAVSMAFLQSYIDVAVKLKGTSTMLLTRINCADWSDVCT-KQNVTEFPIIKMYKKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DSDALREFVMAFKKGKLKPVIKSQPVPKNNKGPVRVVV---GKTFDAIVMDPKKDVLIEF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               田----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EVNIPQDANVVFKRAEEGVPVEFLVLHDVDLIISHVENNMHIEEIQEDEDNDMEGPDIDV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HRKTSNDAKRYSK-----RPLV-VVYYSVDFSFDYRTATQF-WR----NKVLEVAKDFP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     YAPWCGHCKQLEPVYTSLGKKYKGQKDLVIAKMD-ATANDITNDRYKVEGFPTIYFAPSG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BC000425; AAH00425.1; -. BC001928; AAH01928.1; -. BC006344; AAH06344.1; -. BC011754; AAH11754.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OR ERP72 OR ERP70.
                                                                                               J05016; AAA58460.1;
                                                                                                                                                                         requires
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ----YTFAIADE---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (Human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Chordata;
Primates;
                                                                                                                                                                         license
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -EDYATEVKDLGLSESGEDVNAAILDESGKKFAMEPE-EF
                                                                                                                                                                    agreement (See
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Craniata; Vertebrata; Catarrhini; Hominidae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   precursor (EC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Jong
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -PLELTVELTEETFNATVM--ASDSIVLF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Α.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Holcenberg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Hominidae;
                                                                                                                                                                    http://www.isb-sib
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   u
                                                                                                                                                                                                                                                                                                                                                                                                                                                         form
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                intrachain
                                                                                                                                                                                                                                                                                                                                                            ΒE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .3.4.1)
                                                                                                                                                                                                                                                                                                                                                            Þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                         the
                                                                                                                                                                                                                                                                                                                                                            DEOXYCYTIDINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               J.S.
                                                                                                                                                                                                                                         restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (Protein
                                                                                                                                                                                             and
                                                                                                                                                                                                                                                                 EMBL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           analysis
                                                                                                                                                                                                                ıs
                                                                                                                                                                                                                                                                                       D
                                                                                                                                                                                             for
                                                                                                                                                                                                                                                                    collaboration
                                                                                                                                                                    .ch/announce/
                                                                                                                                                                                                                                                                 outstation
                                                                                                                                                                                                                in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ERp-72)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          444
                                                                                                                                                                                                                no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      293
                                                                                                                                                                                                                way
```

```
Вр
                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                      Q
                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                              QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DR FITTER CORRESPONDENT
                                                                                                                                                                                                         RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local S
Matches 74
                                                                                                                                    ER60_SCHMA
P38658;
01-FEB-1995
01-FEB-1995
30-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DISULFID
DISULFID
DISULFID
SITE
SEQUENCE
MEDITARE-94359529; PubMed-8078516;
Finken M., Sobek A., Symmons P., K
"Characterization of the complete
                                                                                                                       01-FEB-1995 (Rel. 31, Created)
01-FEB-1995 (Rel. 31, Last sequal 30-MAY-2000 (Rel. 39, Last announce probable protein disulfide ison
                                                                                                                                                                                               SCHMA
                                    SEQUENCE FROM N.A. STRAIN=Liberian;
                                                                              Schistosoma mansoni (Blood fluke).
Eukaryota; Metazoa; Platyhelminthes;
Schistosomatoidea; Schistosomatidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TIGREAMS; TIGRO1126; pdi.dom; 3.
TIGREAMS; TIGRO1130; ER_PDI_fam;
PROSITE; PS00014; ER_TARGET; 1.
PROSITE; PS00194; THIOREDOXIN; 3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro; IPR000886; ER_targe
InterPro; IPR00063; Thiored
Pfam; PF00085; thiored; 3.
PRINTS; PR00421; THIOREDOXIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Redox-active
SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PIR; A23723; A23723
HSSP; P07237; 1MEK.
MEROPS; C17.002; -.
                                                                     NCBI_TaxID=6183;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CHAIN
                                                                                                                                                                                                                                           377
                                                                                                                                                                                                                                                               585
                                                                                                                                                                                                                                                                                     323
                                                                                                                                                                                                                                                                                                           526
                                                                                                                                                                                                                                                                                                                                                                                                                                                373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    327
                                                                                                                                                                                                                                                                                                                                                        466
                                                                                                                                                                                                                                                                                                                                                                                                     407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          357
                                                                                                                                                                                                                                                                                                                                   271
                                                                                                                                                                                                                                                                                                                                                                              212
                                                                                                                                                                                                                                                                                                                                                                                                                          152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SHVENNMHIEEIQEDEDNDMEGPDIDVQDD-----
                                                                                                                                                                                                                                         QGSTQDSAIKDF--VLKYALPLVGHRKVSNDAKRYTR--RPLVVVYYSVDFSFDYRAA
                                                                                                                                                                                                                                                               VQIITDALLEMFPEITVENLP----
                                                                                                                                                                                                                                                                                     YQDAANNLREDYKFHHTFSTE-----IAKFLKVSQGQLVVMQPE-KFQSKYEPRSHMMDV
                                                                                                                                                                                                                                                                                                           FSEAGNYLK-GYVITGIYSEEDVLLLSTKYAASLPALLLARHTEGKIESIPLASTHAQDI
                                                                                                                                                                                                                                                                                                                               EKYGIVDYMIEQSGPPSKEILTLKQVQEFL----KD---GDDVIIIGVFKGESDPAYQQ
                                                                                                                                                                                                                                                                                                                                                        GTKDLLKFIQLNRISYPVNITSIQEAEEYLSGELYKDLILYSSVSVLGLFSPTMKTAKED
                                                                                                                                                                                                                                                                                                                                                                             LAPEYEKAAKELSKRSPPIPLAKUDATAETDLAKRFDVSGYPTLKIFRKG-RPYDYNGPR
                                                                                                                                                                                                                                                                                                                                                                                                 FLQSYIDVAVKL-KGTSTMLLTRINCADWSDVCTKQNVTEFPIIKMYKKGENPVSYAGML
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GHCKQFAPEYEKIANILKDKDPPIPVAKIDATSASVLASRFDVSGYPTIKILKKGQAVDY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SNRENAIEDEEEEEEEDDDEEEDDLEVKEENGVLVLNDANFDNFVADKDTVLLEFYAPWC
                                                                                                                                                                                                                                                                                                                                                                                                                          EGSRTQEEIVAKVREVSQPDWTPPPEVTLVLTKENFDEVVNDADIILVEFYAPWCGHCKK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     21
39
91
206
555
642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               center;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -EVAETVFRDRKRKLPL---
                                                                                                                                                                                   STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                555
555
94
209
558
558
645
72932
                                                                                                                                                                                                                                                                                                                                                                                                                                              -------ELTVELTEETFNATVMASDSIVL-FYAGWQAVSMA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Isomerase; Endoplasmic reticulum; Repeat;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ER_target.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WW.
                                                                                                                         sequence update)
annotation update)
isomerase ER-60 precursor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           72;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PROTEIN DISULFIDE ISOMERASE A ASP/GLU-RICH (ACIDIC).
REDOX-ACTIVE (BY SIMILARITY).
REDOX-ACTIVE (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PREVENT SECRETION 1
1919C2AE12CD2684
                                                                                                                                                                                   PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   POTENTIAL
  Kunz W.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    138.5;
No. 0.
                                                                               Trematoda;
Schistosoma
                                                                                                                                                                                   484
                                                                                                                                                                                                                                                               SYFRLQKPLLILFSDGTVNPQYKKA
                                                                                                                                                                                   A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .15;
   disulfide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           139;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CRC64;
                                                                                           Digenea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ER.
    isomerase
                                                                                                                             (EC
                                                                                            Strigeidida;
                                                                                                                             5.3.4.1)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  645;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           133;
   gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Signal
                                                                                                                                                                                                                                           430
                                                                                                                                                                                                                                                                630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                           584
                                                                                                                                                                                                                                                                                                                                                                                                                                               406
                                                                                                                                                                                                                                                                                      376
                                                                                                                                                                                                                                                                                                                                   322
                                                                                                                                                                                                                                                                                                                                                                               270
                                                                                                                                                                                                                                                                                                                                                                                                   465
                                                                                                                                                                                                                                                                                                                                                                                                                          211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     356
    of.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           13;
```

```
밁
                                                                                                                                                                                      Вb
                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                             뮹
                                                                                                                                                                                                                                                                                                                                                                                                               Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DISULFID
SITE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIMTS; PRO0421; THIOREDOXIN.
PRIMTS; PRO0421; THIOREDOXIN.
TIGRFAMS; TIGR01126; pdi_dom; 2.
TIGRFAMS; TIGR01130; ER_PDI_fam; 1.
PROSITE; PS00194; THIOREDOXIN; 2.
Redox-active center; Isomerase; Endoplasmic reticulum; Repeat; Signal.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mol.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      expression.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              InterPro; IPR000063; Thiored. Pfam; PF00085; thiored; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL; Z22934; CAA80521.1; -. HSSP; P07237; 1MEK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ÷
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ÷
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Schistosoma mansoni and identification of the tissues of its
    374
                                                                                                                                                                                         286
                                                                                                                                                                                                                                    256
                                                                                                                                                                                                                                                                                    247
                                                                                                                                                                                                                                                                                                                                  199
                                                                                                                                                                                                                                                                                                                                                                                187
                                                                                                                                                                                                                                                                                                                                                                                                                           174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             122 YITNLEDLQNIENALKGKANIIFSYVRAIGIPEHRAVM-----EAGFVYGTTYQFVL 173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             82 -----SICSEFGVSG-----YPTLKIFRNGDLDGEYNGPRNANGI-ANYMISRAGPVSK 129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      15 VIMCIFYMPTVNSLPELSPQKYFSTLQPGLEELNEAVRPLQDYGISVAKVNCVKEEISRY 74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SITUCTURES.
SUBCELLULAR LOCATION: Endoplasmic reticulum lumen (By similarity).
SIMILARITY: CONTAINS 2 THIOREDOXIN DOMAINS.
CAUTION: WAS ORIGINALLY THOUGHT TO BE A PHOSPHATIDYLINOSITOL-4,5-BISPHOSPHATE PHOSPHODIESTERASE TYPE I (PHOSPHOLIPASE C-ALPHA).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   . Biochem. Parasitol. 64:135-144(1994).
CATALYTIC ACTIVITY: Rearrangement of both intrachain and interchain disulfide bonds in proteins to form the native
                                                                                                                                      V--EFLVLHDVDLIISHVENNMHIEEIQEDEDNDMEGPDIDVQDDEVAETVFRDRKRKLP
                                                                                                                                                                                                                                  VFIVS--QQATYEADRRTAEWVAWRLLGKAGVLLLLRDSLEVNIPQDANVVFKRAEEGVP 313
                                                                                                                                                                                                                                                                                DLVVLYNNQ------SIDSYPSGVKYLRNRVLKTLKDNPQKFKN-----L
                                                                                                                                                                                                                                                                                                                             KLVLDLTQQCRRTLMEQPLTTLNIHLF - - - IKTMKAPLLTEVAEDPQQVSTVHLQLGLPL
                                                                                                                                                                                                                                                                                                                                                                                                                           TTEIAL -----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VALVKFYAPWCGHCKKLAPE-FTSAAQIISGKTND-----VKLVKVDCTTQE----
                                             LELTVELTEETFNATVMASDSIVLFYAGWQAVSMAFLQSYIDVAVKLKGTSTMLLTRINC 431
                                                                                                                                                                                    VFAYSFADDFSYEISDYGIE-------ADKLPAVVIQSKDKKYKLEKFSLD
                                                                                                                                                                                                                                                                                                                                                                           PSDNELRVYLPKRLRTKFEDDFAVYKGELESNNIKDWIRKHGQGLVGYRSPSNTFYFENS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CGKEKDLMKAYLFKGNILLREFPTDTLF------DVNAIVAHVLFALLFSEVK 121
                                                                                             AFSDELNKFEDGLLTPHVKS----EPLPTDDSSAVK-KLVALNFDEIVN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EVSTVSD---VENVLSDDKPTVFAFVKSSSDPLIKTFMALAKSMVDDAVFCHSHNNLFVT 186
-----NEE-----KDVMVVFHAGWCGHCKNLMPKYEEAASKVKNEPNLVLAAMD-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       104;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  484 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                46
388
481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             49
391
484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  54305 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                         ;; Score 138; DB i; Length 484;
;; Pred. No. 0.1;
84; Mismatches 184; Indels 176;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ER-60.
REDOX-ACTIVE (BY SIMILARITY).
REDOX-ACTIVE (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PREVENT SECRETION FROM ER (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PROBABLE PROTEIN DISULFIDE ISOMERASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                D85606CFC5C269B9 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           81
                                                                                                                                         371
                                                                                                                                                                                                                                                                                                                                255
                                                                                             373
                                                                                                                                                                                                                                                                                                                                                                           246
                                                                                                                                                                                                                                                                                  285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    23;
```

Qy

Вp Q Qy

δÃ

```
Qy
                                              Ър
 밁
                                                                    δÃ
                                              418
 465
                       490
                                                                      432
                      EAEEYLSG 497
                                              ATANDVPSPYQVRGFPTIYFVPKGKKSSPVSYEGGRDTNDIIKYL-----
                                                                     ADWSDVCTKQNVTEFPIIKMYKKGE--NPVSYAGMLGTKDLLKFIQLNRISYPVNITSIQ 489
EATEELIG
472
                                              ---AR
                                              464
```

Search completed: March 13, Job time: 21 secs 2003, 17:13:21

THIS PAGE BLANK (USPTO)

```
Title:
Perfect score:
Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Database :
æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Run on:
                                                                     Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                     SPTREMBL_21:*

1: sp_archea:*
2: sp_bacteria:*
3: sp_fungi:*
4: sp_human:*
5: sp_invertebrate
6: sp_mammal:*
7: sp_mhc:*
8: sp_organelle:*
9: sp_phage:*
10: sp_plant:*
11: sp_votent:*
12: sp_virus:*
13: sp_vertebrate:
14: sp_unclassific
15: sp_archeap:*
16: sp_bacteriap:*
17: sp_archeap:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      March 13, 2003, 17:11:22; Search time 36 Seconds (without alignments) 4618.889 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-847-046-2
4142
1 MESGENVERVGISFVIMCIF.....FKEAEKSERRDKELGCSKVN 807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            671580 seqs, 206047115 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GenCore version 5.1.4_p5_4578 Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                               sp_organelle:*
sp_phage:*
sp_plant:*
sp_rodent:*
sp_virus:*
                                                                                                                                                   sp_vertebrate:*
sp_unclassified:*
sp_rvirus:*
sp_bacteriap:*
sp_archeap:*
                                                                                                                                                                                                                                                                                                                                                                                        sp_invertebrate:*
                                  SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       671580
```

Result	Score	Query Match	Length DB	DΒ	ID	Description
_	4025	97.2	806	4	Q9P2K2	Q9p2k2 homo sapien
2	1839	44.4	357	4	Q9H9W7	Q9h9w7 homo sapien
ω	1423	34.4	354	11	Q9CS82	Q9cs82 mus musculu
4	815	19.7	225	11	Q8R2W8	mus
ر ت	184.5	4.5	502	ω	074568	074568 trichoderma '
6	182	4.4	546	10	Q9C818	Q9c818 arabidopsis
7	178	4.3	519	10	Q9LW75	Q91w75 arabidopsis
8	176	4.2	489	IJ	076945	076945 fasciola he
9	169.5	4.1	482	σ	Q26593	Q26593 schistosoma
10	168.5	4.1	505	11	Q99LF6	Q991f6 mus musculu
11	166.5	4.0	505	11	Q91Z81	
12	162	3.9	577	16	Q8R6N2	
13	158	3.8	369	13	Q91815	Q9i8i5 fugu rubrip
14	154	3.7	494	u	Q9GPH2	Q9gph2 bombyx mori
15	150.5	3.6	517	ω	Q9C1Z8	Q9c1z8 pichia past
16	150	3.6	579	10	Q8VX13	Q8vx13 arabidopsis

45 125.5	44 126	43 126.5	42 126.5	41 126.5	40 127	39 127.5	38 127.5	37 127.5			34 128.5		32 130.5	31 130.5		29 132.5	28 133	27 134.5	26 135	25 136	24 137		22 138.5		20 143.5		18 147.5	17 148
3.0	3.0	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.2	3.2		3.2				ယ			ω ω			ω 5			3.6
371	1042	1214	1014	1014	443	509	489	488	480	977	2149	509	485	363	574	2795	572	440	497	930	366	487	416	393	2471	359	483	566
10	Н	17	N	Ν	10	11	თ	σ	5	10	10	11	G	ω	ъ	N	ഗ	10	υ	16		w	ۍ			10	IJ	10
Q942L2	Q9C4Y4	Q8U3H2	Q8RIY7	Q8RN21	Q9MAU6	Q922C8	Q9TWZ1	017908	096460	Q9XI14	Q9M3D3	Q8R4U2	Q17967	013704	P91442	Q9RNB1	044508	048773	076191	Q9CLY4	Q93Y71	Q96VF3	Q9VYV3	001492	Q9YTK3	P93358	Q9GRI2	Q9SV44
Q94212 oryza sativ	Q9c4y4 sulfolobus		Q8riy7 campylobact	Q8rn21 campylobact	Q9mau6 arabidopsis	Q922c8 mus musculu	Q9twz1 drosophila	017908 caenorhabdi	O96460 schistosoma		Q9m3d3 arabidopsis	N	Q17967 caenorhabdi	013704 schizosacch			044508 caenorhabdi	048773 arabidopsis	ď		Q93y71 oryza sativ		Q9vyv3 drosophila	001492 caenorhabdi	Q9ytk3 ateline her	p93358 nicotiana t	Q9gri2 plasmodium	Q9sv44 arabidopsis

					:					
Db	Оу	Qu Ma	RP RR R	88888	G D D D D D D D D D D D D D D D D D D D	RESULT Q9P2K2 ID Q				
61	20	ery Nest Lo	SEQUENC SEQUENC TISSUE= MEDLINE Nagase Nagase Nagase "predic "predic "predic "predic "predic "predic "non res EMBL; A Interpr	Homo Euka Mamm NCBI	01-0 01-0 01-0	LT 1 K2 Q9P2K2		442	38 39 30	10 W 4 D A
		Query Match Best Local Similarity 97. Matches 788; Conservative	SEQUENCE FROM N.A TISSUE-BRAIN; TISSUE-BRAIN; MEDLINE-20181126; MEDLINE-20181126; Nagase T., Kikuno The complete seque for large protein DNA Res. 7:65-73(EMBL; AB037765; BEMBL; AB037765; BINTERPOOD NON.TER 10	Homo sapiens (Human). Eukaryota; Metazoa; C Mammalia; Eutheria; P NCBI_TaxID=9606;	09P2K2; 01-OCT-2000 (TrEMBLrel. 15 01-OCT-2000 (TrEMBLrel. 15 01-DEC-2001 (TrEMBLrel. 19 KIAA1344 protein (Fragment)K2		126.5 126.5 126.5 126	127.5 127.5 127.5 127.5 127.5	130.5 130.5 130.5 128.5 128.5
(EEISKY	ASLPELS HILLI	llarity Conser	FROM N.A. AIN; AIN; (0181126; (0181126; (0181126) (0181126; (0181126) (01811	(Huma Metazoa Itheria 1606;	(Treme (Treme (Treme	PRELIMINARY				
CGKEKD	SPQKYFS	97. 97. vative	FROM N.A. AAIN; 20181126; PubMed-10718198 Wikkuno R., Ishikawa K. Con of the coding sequence of 150 new proteins in vitro."; 7:65-73(2000) 37765-73(2000) 178000063; Thiored. 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	nn). n; Chordata; n; Primates;	Hrel. Hrel. Hrel. Fragme	IINARY;		1014 1214 1214 1042 371	4 8 8 9 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	485 509 2149 977
LMK/	TLQI	8 %	-107 hika g se f 15 tro. tro. orec	data	15, 15, 19, nt).			2 17 10	10 5	51015
AKVNCYKEELSKYCGKEKULMKAYLFKGYLLLKEEPTUTLEUVNALVAHVLEALLESEVK - - - - - - - - - - - - - - - - - - -	FYMPTVNSLPELSPOKYFSTLOPGLEELNEAVRPLODYGIS	Score 4025; DB 4; Leneral Pred. No. 3.6e-279; O; Mismatches 0; Inc.	SEQUENCE FROM N.A. TISSUE-BRAIN; MEDLINE-20181126; PubMed-10718198; MEDLINE-20181126; PubMed-10718198; MEDLINE-20181126; PubMed-10718198; MEDLINE-20181126; PubMed-10718198; MEDLINE-20181126; PubMed-10718198; MITOSAWA M., Ohara O.; Prediction of the coding sequences of unidentified human genes.XVI The complete sequences of 150 new cDNA clones from brain which code for large proteins in vitro."; DNA Res. 7:65-73(2000) DNA Res. 7:65-73(2000) EMBL; AB037765; BAA92582.1; - EMBL; AB03	Craniata; Vertebrata; Catarrhini; Hominidae;	Creat Last Last	PRT; 806 AA.	ALIGNMENTS	OBRIY7 OBU3H2 O9C4Y4 O942L2	017908 017908 097W21 0922C8 0948406	Q17967 Q17967 Q8R4U2 Q9M3D3 Q9X114
AHVLEALLESEVK 121 AHVLFALLESEVK 120		Length 806; Indels 18; Gaps 1	a O.; human genes.XVI. rain which code	Euteleostomi; Homo.				QBriy7 campylobact QBriy7 campylobact QBu3h2 pyrococcus Q9c4y4 sulfolobus Q9c4y4 surfolobus Q94212 oryza sativ	തയ	ω N

```
δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q
                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                   B
                                                                                                                                                                                                                                                                                                                                                                                                   δõ
                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 뭐
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
 Query
                                                                                                                                                                       01-MAR-2001
01-MAR-2001
01-MAR-2001
               SEQUENCE FROM N.A.

Isogai T., Ota T., Hayashi K., Sugiyama T., Otsuki T., Su Nishikawa T., Nagai K., Sugano S., Aotsuka S., Yoshikawa Matsunawa H., Ishii S., Kawai Y., Saito K., Yamamoto J., Nakamura Y., Nagahari K., Masuho Y., Sasaki N.;

"NEDO human CDNA sequencing project.";

Submitted (AUG-2000) to the EMBL/GenBank/DDBJ databases.

EMBL; AK022563; BAB14101.1; -.

SEQUENCE 357 AA; 40469 MW; A7FCD0E5C2D2E560 CRC64;
                                                                                                                                Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                   CDNA FLJ12501 fis, clone Homo sapiens (Human)
                                                                                                                                                                                                             Q9H9W7
                                                                                                                                                                                                                                                                                                      721
                                                                                                                                                                                                                                                                                                                                             661
                                                                                                                                                                                                                                                                                                                                                                662
                                                                                                                                                                                                                                                                                                                                                                                     601
                                                                                                                                                                                                                                                                                                                                                                                                       602
                                                                                                                                                                                                                                                                                                                                                                                                                           541
                                                                                                                                                                                                                                                                                                                                                                                                                                              542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 181
                                                                                                                                                                                                                                                                                  782
                                                                                                                                                                                                                                                                                                                         722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            122
                                                                                                                                                                                                                                                                781
Match
                                                                                                                                                                                                                                                                                                                                                                                   YITNLEDLQNIENALKGKANIIFSYVRAIGIPEHRAVMEAGFVYGTTYQFVLTTEIALLE
                                                                                                                                                                                                                                                                          WNRSNWFKEAEKSFRRDKELGCSKVN
                                                                                                                                                                                                                                                                                                               KPPLPAYDFLSMIDAATSQRGTRKVPKCMKETDVQENDKEQHEDKSAVRKEPIETLRIKH
                                                                                                                                                                                                                                                                                                                                                       AYFDPLPPLPLLVLVNLHSGGQVFAFPSDQAIIEENLVLWLKKLEAGLENHITILPAQEW
                                                                                                                                                                                                                                                                                                                                                                                                                         PVNITSIQEAEEYLSGELYKDLILYSSVSVLGLFSPTMKTAKEDFSEAGNYLKGYVITGI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STMLLTRINCADWSDVCTKQNVTEFPIIKMYKKGENPVSYAGMLGTKDLLKFIQLNRISY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VFRDRKRKLPLELTVELTEETFNATVMASDSIVLFYAGWQAVSMAFLQSYIDVAVKLKGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NVVFKRAEEGVPVEFLVLHDVDLIISHVENNMHIEEIQEDEDNDMEGPDIDVQDDEVAET
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WNRSNWFKEAEKSFRRDKELGCSKVN
                                                                                                                                                                                                                                                                                                      KPPLPAYDFLSMIDAATSQRGTRKVPKCMKETDVQENDKEQHEDKSAVRKEPIETLRIKH
                                                                                                                                                                                                                                                                                                                                             AYFDPLPPLPLLVLVNLHSGGQVFAFPSDQAIIEENLVLWLKKLEAGLENHITILPAQEW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VFRDRKRKLPLELTVELTEETFNATVMASDSIVLFYAGWQAVSMAFLQSYIDVAVKLKGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NVVFKRAEEGVPVEFLVLHDVDLIISHVENNMHIEEIQEDEDNDMEGPDIDVQDDEVAET
                                                                                                                                                            (TrEMBLrel. 16, Created)
(TrEMBLrel. 16, Last sequence update)
(TrEMBLrel. 16, Last annotation update)
01 fis, clone NT2RM2001681.
                                                                                                                              Chordata;
Primates;
                                                                                                                               Craniata; Ve
Catarrhini;
                                                                                                                                                                                                                                                                                  807
 1839;
                                                                                                                                                                                                              357
                                                                                                                                           Vertebrata;
                                                                                                                                                                                                           $
                                                                                                                                Hominidae;
DВ
Length
                                                                                                                                           Euteleostomi;
                                                                                        Suzuki Y.,
 357;
                                                                     Wakamatsu
                                                                                                                                                                                                                                                                                                      780
                                                                                                                                                                                                                                                                                                                        781
                                                                                                                                                                                                                                                                                                                                                               721
                                                                                                                                                                                                                                                                                                                                                                                    660
                                                                                                                                                                                                                                                                                                                                                                                                                                             601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                       661
                                                                                                                                                                                                                                                                                                                                                                                                                         600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    360
                                                                     Α.
```

```
Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                     RC STRAIN—C57BL/6; TISSUB=EMBRYO;
RC MEDLINE-21085660; pubMed-11217851;
RA Kawai J., Shinagawa A., Shibata K., Yoshino M., Itoh M., Ishii Y.,
RA Kawai J., Shinagawa A., Shibata K., Konno H., Adachi J., Fukuda S.,
RA Arakawa T., Hara A., Fukunishi Y., Konno H., Kondo S., Yamanaka I.,
RA Alzawa K., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamanaka I.,
RA Alzawa K., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamanaka I.,
RA Alzawa K., Jastawa M., Nishi K., Kiyosawa H., Kondo S., Yamanaka I.,
RA Kadota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,
RA Kadota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,
RA Fleischmann W., Gaasterland T., Gissi C., King B., Kochiwa H.,
RA Kuehl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,
RA Kuehl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,
RA Kuehl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,
RA Kuehl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,
RA Schiml L.M., Staubli F., Suzuki R., Tomita M., Wagner L., Washio T.,
RA Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,
RA Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,
RA Blake J., Boiffelli D., Bojunga N., Carninci P., de Bonaldo M.F.,
RA Brownstein M.J., Butt C., Fletcher C., Fujita M., Gariboldi M.,
RA Gustincich S., Hill D., Hofmann M., Hume D.A., Kamiya M., Lee N.H.,
RA Lyons P., Marchionni L., Mashina J., Mazzarelli J., Mombaerts P.,
RA Gustincich S., Schoenbach C., Seya T., Shibata Y., Storch K.-F.,
RA Sasaki H., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F.,
RA Wynshaw-Boris A., Yoshida K., Hasegawa Y., Kawaji H., Kohtsuki S.,
RA Hayashtzaki Y.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-JUN-2001
01-JUN-2001
01-JUN-2001
                    Nature 409:685-690(2001).
EMBL; AK017582; BAB30819.1; -.
EMBL; 5730420B22Rik.
NGD; MGI:1917811; 5730420B22Rik.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryota; Metazoa;
Mammalia; Eutheria;
NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-JUN-2001 (TrEMBLrel. 17, Created)
01-JUN-2001 (TrEMBLrel. 17, Last sequence update)
01-JUN-2001 (TrEMBLrel. 17, Last annotation updat
5730420B22Rik protein (Fragment).
     SEQUENCE
                                                                                                                Hayashizaki Y
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5730420B22RIK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q9CS82;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q9CS82
                                                                                             "Functional annotation of a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  451 MYKKGENPVSYAGMLGTKDLLKFIQLNRISYPVNITSIQEAEEYLSGELYKDLILYSSVS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   751
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local Similarity
nes 356; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   _
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KETDVQENDKEQHEDKSAVRKEPIETLRIKHWNRSNWFKEAEKSFRRDKELGCSKVN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QAIIEENLVLWLKKLEAGLENHITILPAQEWKPPLPAYDFLSMIDAATSQRGTRKVPKCM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IESIPLASTHAQDIVQIITDALLEMFPEITVENLPSYFRLQKPLLILFSDGTVNPQYKKA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KETDVQENDKEQHEDKSAVRKEPIETLRIKHWNRSNWFKEAEKSFRRDKELGCSKVN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MYKKGENPVSYAGMLGTEDLLKFIQLNRISYPVNITSIQEAEEYLSGELYKDLILYSSVS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QAIIEENLYLWLKKLEAGLENHITILPAQEWKPPLPAYDFLSMIDAATSQRGTRKVPKCM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Metazoa; Chordata; C
Metazoa; Chordata; C
     354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
     AA;
354
39924 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          99.78;
                                                                                               full-length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Mus
     42B75F03910AEC75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2.3e-123;
ches 0;
                                                                                               mouse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   update)
     CRC64;
                                                                                               collection.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                     Storch K.-F.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                  Ŧ.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            750
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0,
```

Query Match Best Local S Matches 274

Similarity

34.48; 77.68;

274;

Conservative

34;

Pred. Score 1423;

No.

.3e-93; les 27;

.18;

Gaps

1;

DB 11;

Length

```
RESULT
074568
ID 07
AC 07
DT 01
                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT RESULT RESULT OF SERZWAR SET SER RA SET RA S
                                                                                                        DP
QA
                                                                                                                                                             B
                                                                                                                                                                                         Qy
                                                                                                                                                                                                                              Ъ
                                                                                                                                                                                                                                                      οy
                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               日
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Б
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ър
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 20
                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local S
Matches 149
074568
074568;
01-NOV-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q8R2W8 PRELIMINARY; PRT; 225 AA. Q8R2W8; Q1-JUN-2002 (TrEMBLrel. 21, Created) 01-JUN-2002 (TrEMBLrel. 21, Last sequence update) 01-JUN-2002 (TrEMBLrel. 21, Last annotation update) Hypothetical 25.5 kDa protein (Fragment). Mus musculus (Mouse). Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Butheria; Rodentia; Sciurognathi; Muridae
                                                                                                                                                                                                                                                                                                                                                                                                                     NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Strausberg R.;
Submitted (APR-2002) to the
EMBL; BC027108; AAH27108.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                Hypothetical protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      182
                                                                                                                                                                     122
                                                                                                                                                                                                    869
                                                                                                                                                                                                                                                               638
                                                                                                                                                                                                                                                                                                                           578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   122
                                                                                                          182
                                                                                                                                       758
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               62
                                                                                                                                                                                                                                  62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            N
                                                                                                                                                                                                                                                                                            Ν
                                                                                                                                                                                                                            STHAQDIVQIITDALLEMFPEITVENLPSYFRLQKPLLILFSDGTVNPQYKKAILTLVKQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGVLLLLRDSLEVNIPQDANVVFKRAEEGVPVEFLVLHDVDLIISHVENNMHI 335
||||||||||:|||| | | | 35
| AGVLLLLRDSMDVNIPQHANVAFRRAEKDVPVEFLVLNDVELIISHVKNNMHI 354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DVNAIVAHVLFALLFSEVKYITNLEDLQNIENALKGKANNIIFSYVRAIGIPEHRAVMEAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MFSGFNVFRVGISFVIMCIFYMPTVNSLPELSPQKYFSTLQPG------
                                                                                                      SAELQPGDRSTARREPVEMLRIKRWNTANWPKDTQEPFHHDKEL
                                                                                                                        LVLWLKKLEAGLENHITILPAQEWKPPLPAYDFLSMIDAATSQRGTRKVPKCMKETDVQE
                                                                                                                                                                                                                                                                                           TTLVQDMAQILANALLEAFPEITVENLPTYLRFQRPLLLLFSGGSINPQYRNTILALVRQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HLFIKTMKAPLLTEVAEDPQQVSTVHLQLGLPLVFIVSQQATYEADRRTAEWVAWRLLGK
                                                                                                                                                                    LVLWLKHLQAGLENPITVLSAQEWKPPLPAFDFLNMMDAPTSQAPTKKVLECQKEAEVQE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HVFVKTMNAPLLMEVAEDPQQVSTVHLQLGLPLVFIISQRATQEADRRTAEWVAWHLLGK
                                                                                                                                                                                                                                                                                                                                                        al Similarity
149; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                     225 AA;
                                                                                                                                                                                                                                                                                                                                                        Conservative
(TrEMBLrel.
                                PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                     19.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                     25507 MW;
,80
                                                                                                                                                                                                                                                                                                                                                        35;
Created)
                                                                                                                                                                                                                                                                                                                                                      Score 815; DB
Pred. No. 2e-5
35; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Mus
                                PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                     CD258D57A19A3270
                                502
                                                                                                                                                                                                                                                                                                                                                                     2e-50;
                                                                                                                                                                                                                                                                                                                                                                                  DB 11;
                                A
                                                                                                                                                                                                                                                                                                                                                        40;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 databases
                                                                                                                                                                                                                                                                                                                                                                                                                     CRC64;
                                                                                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                     801
                                                                                                          225
                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                      225;
                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             102
                                                                                                                                                                    181
                                                                                                                                                                                                                               121
                                                                                                                                                                                                                                                              697
                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61
                                                                                                                                                                                                 757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   222
                                                                                                                                                                                                                                                                                                                                                        0;
δÃ
                            B
                                                      Q
                                                                                          DЬ
                                                                                                                     Qγ
                                                                                                                                                    g
                                                                                                                                                                               Qγ
                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                            δõ
                                                                                                                                                                                                                                                                           뫄
                                                                                                                                                                                                                                                                                                        ρ
                                                                                                                                                                                                                                                                                                                                        망
                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                   뫄
                                                                                                                                                                                                                                                                                                                                                                                                                               Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DT TYPE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local S
Matches 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CHAIN
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STRAIN-RUTC:
492
                              425
                                                             439
                                                                                                                       382
                                                                                                                                                     335
                                                                                                                                                                                    322
                                                                                                                                                                                                                 275
                                                                                                                                                                                                                                               280
                                                                                                                                                                                                                                                                           218
                                                                                                                                                                                                                                                                                                         221
                                                                                                                                                                                                                                                                                                                                        174
                                                                                                                                                                                                                                                                                                                                                                      161
                                                                                                                                                                                                                                                                                                                                                                                                     139
                                                                                                                                                                                                                                                                                                                                                                                                                                  101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5
```

```
TIGREAMS; TIGRO1130; ER_DDI_fam; 1.
TIGREAMS; TIGRO1126; pdi_dom; 2.
PROSITE; PS00014; ER_TARGET; UNKNOWN_1.
PROSITE; PS00194; THIOREDOXIN; 1.
Isomerase; Redox-active center; Signal.
TGNAT. 1 20 POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MO1. Gen. Genet. 262:35-45(1999).
EMBL; AJ222773; CAA10978.1; -.
HSSP; P07237; 1MEK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      reesei is induced by endoplasmic reticulum stress carbon source.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-NOV-1998 (TrEMBLrel. 08, Last sequence up 01-JUN-2002 (TrEMBLrel. 21, Last annotation Protein disulphide isomerase precursor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             InterPro; IPR000886; ER_target.
InterPro; IPR000063; Thiored.
Pfam; PF00085; thiored; 2.
PRINTS; PR00421; THIOREDOXIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE=99430859; PubMed=10503534;
Saloheimo M.L.A., Lund M., Penttila M.E.;
"The protein disulphide isomerase gene of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Hypocreales; Hypocreaceae; Hypocrea.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Trichoderma reesei (Hypocrea jecorina).
Eukaryota; Fungi; Ascomycota; Pezizomycotina;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local Similarity
                                                                                                                                                                                                                                                                                                                                 LGK-----AGVLLLLRDSLEV----NIPQDANVVFKRAEEGVPVEFLVLHD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FNDF-INSNDLVLAESFAPWCGHCKALAP-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ENVFRVGISFVIMCIFYMPTVNSLPELSPQKYFSTLQPGLEELNEAVRPLQDYGISVAKV
                                                                                                                                                                                                                                                                                                                                                                                            AIRNFAQVAATPLVGEVG---PETYAGYMSAGIPLAYIFAETAEERENLAKTLKPVAEKY
                                                                                                                                                                                                                                                                                                                                                                                                                   NIHLFIKTMKAPLLTEVAEDPQQVSTVHLQLGLPLVFIVSQQATYEAD-RRTAEWVAWRL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LFDVNAIVAHVLFALLFSEVKYITNLEDLQNIENALKGKANIIFSYVRAIGIPEHRAVME
EEYLSGE
                                           - PDEIQGFPTIKLYPAGDKKNPVTYSGARTVEDFIEFIKENGKYKAGVEIPAEPTEEAEA
                                                                                    TKQNVTEFPIIKMYKKGE--NPVSYAGMLGTKDLLKFIQLN-----RISYPVNITSIQEA
                                                                                                                                                                      TFNATVMASDSIVLFYAGWQAVSMAFLQSYIDVA---VKLKGTSTMLLTRINCADWSDVC
                                                                                                                                                                                                                                                             VDLIISHVENNMHIEEIQEDEDNDMEGPDIDVQDDEVAETVFRDRKRKLPLELTVELTEE
                                                                                                                                                                                                                                                                                                        KGKINFATIDAKNFGSHAGNINLKTDKFPAFAIHDIEKNLKFPFDQSKEITEKDIAAFVD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGFVYGTTYQFVLTTEIALLESIGSEDVEYAHLYFFHCKLVLDLTQQCRRTLMEQPLTTL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LEDFKTADKVVLVAYIAADDK--ASNETFTALANELR---
                                                                                                                                                                                                                    -GFSSGKIEASIKSEPIPETQ----EGPVTVVVAHSYKDIVLDDKK----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         21
502 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -DTYLFGGVNDAAVAE----AEGVKFP-----SIVLYKSFDEGKNVFSEKFDAE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           N.A.
                                                                                                                               DVLIEFYTPWCGHCKALAPKYDELASLYAKSDFKDKVVIAKVD-ATANDV-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           54668 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4.5%;
20.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       85;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PROTEIN DISULPHIDE ISOMERASE; 159D6E787CAF3F02 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 184.5;
Pred. No. 8.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5; DB 3;
3.9e-05;
nes 210;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ----EYEEAATTLKDKSIKLAKV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    fungus Trichoderma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sordariomycetes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels 141;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             regulated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ρy
                                                                                                                                                                           438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100
                                                                                    491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            64
                                                                                                                               424
                                                                                                                                                                                                                                                                                                                                                                                            274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   78
                                                                                                                                                                                                                    375
                                                                                                                                                                                                                                                             381
                                                                                                                                                                                                                                                                                                          334
                                                                                                                                                                                                                                                                                                                                                   321
                                                                                                                                                                                                                                                                                                                                                                                                                                        279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  the
```

21;

В

484

SESKASE

490

```
밁
                                        Ş
                                                                                    밁
                                                                                                                        Š
                                                                                                                                                                      В
                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                        망
                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT
Q9C818
                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Theologis A., Ecker J.R., Palm C.J., Federspiel N.A., Kaul S.,

White O., Alonso J., Altafi H., Araujo R., Bowman C.L., Brooks S.Y.,

Ra White O., Alonso J., Altafi H., Araujo R., Bowman C.L., Brooks S.Y.,

Ra Buehler E., Chan A., Chao Q., Chen H., Cheuk R.F., Chin C.W.,

Ra Chung M.K., Conn L., Conway A.B., Conway A.R., Creasy T.H., Dewar K.,

Dunn P., Etgu P., Feldblyum T.V., Feng J.-D., Fong B., Fujii C.Y.,

Ra Chung M.K., Conn L., Conway A.B., Conway A.R., Creasy T.H., Dewar K.,

Ra Chung M.K., Conn L., Conway A.B., Conway A.R., Creasy T.H., Hughes B., Hultar L.,

Ra Chung M.K., Conn L., Conway A.B., Conway A.R., Khaykin E.,

Ra Gill J.E., Goldsmith A.D., Haas B., Hansen N.F., Hughes B., Hultar J.L., Jenkins J., Johnson Hopson C., Khan S., Khaykin E.,

Rim C.J., Koo H.L., Kremenetskaia I., Kurtz D.B., Kwan A., Lam B.,

Lin X., Liu S.X., Liu E.A., Lee J.M., Lenz C.A., Li J.H., Li Y.-P.,

Ra Lingin Hooper S., Lee A., Lee J.M., Lenz C.A., Li J.H., Li Y.-P.,

Ra Lin X., Liu S.X., Liu Z.A., Luros J.S., Maiti R., Marziali A.,

Militscher J., Miranda M., Nguyen M., Nierman W.C., Osborne B.I.,

Ra Militscher J., Miranda M., Nguyen M., Nierman W.C., Osborne B.I.,

Ra Militscher J., Miranda M., Nguyen M., Nierman W.C., Osborne B.I.,

Ra Akano H., Salzerg S.L., Schwartz J.R., Shinn P., Southwick A.M.,

Ra Sun H., Tallon L.J., Tambunga G., Toriumi M.J., Town C.D.,

"Scenunce and Anniverse of Anniverse M., Vysotskaia V.S., Walker M.,

"Scenunce and Anniverse of Anniverse T.G., Davis R.M.;

"Scenunce and Anniverse of Anniverse T.G., Davis R.M.;
                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
Matches 111; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q9C818;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Nature 408:816-820(2000).
EMBL; AC037424; AAG51554.1;
HSSP; P07237; 1MEK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STRAIN=CV. COLUMBIA;
MEDLINE=21016719; PubMed=11130712;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosid eurosids II; Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-JUN-2001 (TrEMBLrel. 17, Created)
01-JUN-2001 (TrEMBLrel. 17, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         InterPro; IPR000886; ER_targe
InterPro; IPR000063; Thiored.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   thaliana.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NCBI_TaxID=3702;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Arabidopsis thaliana (Mouse-ear cress).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PROSITE; PS00014; ER_TARGET; UNKNOWN_1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    "Sequence and analysis of chromosome 1 of the plant Arabidopsis
244
                                               529
                                                                                        193
                                                                                                                               488
                                                                                                                                                                        134
                                                                                                                                                                                                               428
                                                                                                                                                                                                                                                                                                 369
                                                                                                                                                                                                                                                                                                                                                                                   317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6
                                                                                                                                                                                                                                                        77
                                                                                                                                                                                                                                                                                                                                          19
                                                                                                                                                                                                                                                                             LVLHDVDLIISHVENNMHIEEIQEDEDNDME---GPDIDVQDD-----EVAETVFRDRKR 368
    KLLFPDLKSNNVFIGLVKPEAERYTVYDGSYKMEKILEFLGSNKFPLFTKLTETNTVWVY
                                                                                                                             IQEAEEYLSGELYKDLILYSSVSVLGLF-----
                                                                                                                                                                                                                                                                                                                                     LILLSFTIIIAYSSPDSNVESNEPGFDSDLDQLLAVDEQLQEDRPEQQSEAETV--SKAQ
                                             -----AGNYLKGY---
                                                                                      VDEAPRFL--DKYHTF-----VLGLFEKFEGSEHNEFVKAAKSDDEIQFIETRDSDVA
                                                                                                                                                                        KIDGDRYSKIASELEIKGFPTLLLFVNGTS-LTYNGGSSAEDIVIWVQKKTGAPIITLNT
                                                                                                                                                                                                               RINCADWSDVCTKQNVTEFPIIKMYKKGENPVSYAGMLGTKDLLKFIQLNRISYPVNITS
                                                                                                                                                                                                                                                        RIVLELNGDYTKRVIDGNEFV---MVLGYAPWCARSAELMPRFAEAATALKEIGSSVLMA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PF00085;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      disulfide isomerase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           546
                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        thiored;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61166 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                             4.48; 20.98;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ER_target
                                             -----VITGIYSEEDVL--LLSTKY-----
                                                                                                                                                                                                                                                                                                                                                                                                                       93;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 precursor, putative, 72379-69727
                                                                                                                                                                                                                                                                                                                                                                                                                     Score 182; DB 10;
Pred. No. 0.00015;
3; Mismatches 180;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           E7B206FEF239270C CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           546
                                                                                                                               -SPTMKTAKED----FSE-----
                                                                                                                                                                                                                                                                                                                                                                                                                       180;
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 546;
                                                                                                                                                                                                                                                                                                                                                                                                                       Indels 148;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Dewar K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Rosidae;
                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                     133
                                                                                                                                                                                                                                                                                                 427
                                             554
                                                                                    243
                                                                                                                               528
                                                                                                                                                                        192
                                                                                                                                                                                                               487
                                                                                                                                                                                                                                                                                                                                       76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ۲.,
                                                                                                                                                                                                                                                                                                                                                                                                                       25;
```

```
RESULT
Q9LW75
밁
                    Qy
                                                  В
                                                                          Qy
                                                                                                       В
                                                                                                                            QΥ
                                                                                                                                                           В
                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Вp
                                                                                                                                                                                                            Query Match
Best Local S
Matches 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q9LW75 PRELIMINARY;
Q9LW75;
01-OCT-2000 (TrEMBLrel. 1
01-OCT-2000 (TrEMBLrel. 1
01-JUN-2002 (TrEMBLrel. 2
Dbj|BAA81871.1.
                                                                                                                                                                                                                                                                                                                                     DNA Res. 7:131-135(2000).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Arabidopsis thaliana (Mouse-ear cress).
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosid:
eurosids II; Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                                                                                Pfam; PF00085; thiored; 3.
PROSITE; PS00014; ER_TARGET; UNKNOWN_1.
SEQUENCE 519 AA; 57859 MW; 40A4AB1C7CD2F123 CRC64;
                                                                                                                                                                                                                                                                                                                                 EMBL; AB012247; BAF
HSSP; P07237; 1MEK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sato S., Nakamura Y., Submitted (MAR-1998)
                                                                                                                                                                                                                                                                                                     InterPro; IPR000886;
InterPro; IPR000063;
                                                                                                                                                                                                                                                                                                                                                                                    features of the
                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE=20277480; PubMed=10819329;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRAIN-COLUMBIA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NCBI_TaxID=3702;
                                                                                                                                                                                                                                                                                                                                                                                                 "Structural
                                                                                                                                                                                                                                                                                                                                                                                                                 Nakamura
183
                          480
                                                                            421
                                                  124
                                                                                                                                  362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 467 FENLV-------FARIDASANE-----HTKLQVDDK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           709
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          304
                                                                                                        70
                                                                                                                                                           10
ASTIKLDTVDEASGFLKKHHTFILGLFEKSEDSSGHDEFVKAASLDNEIQFVETSSIDVA
                       SYPVNITSIQEAEEYL----
                                                  IGSSVLMAKIDGERYSKVASQLEIKGFPTLLLFVNGTSQ-SYTGGFSSEEIVIWVQKKTG
                                                                          T-STMLLTRINCADWSDVCTKQNVTEFPIIKMYKKGENPVSYAGMLGTKDLLKFIQLNRI
                                                                                                        VSKAQR-----IVVELNGDNTKRLIDGNEYVMVLGYAPWCARSAELMPRFAEAATDLKE
                                                                                                                               VFRDRKRKLPLELTVELTEETFNATVMASDSI-VLFYAGWQAVSMAFLQSYIDVAVKLKG
                                                                                                                                                           KFSILFTFLLLLSFLIFVARSSDVAVEAGSEEELDDLEQLLAVDEQLQEERPEQQSEAET
                                                                                                                                                                                   EFLVLHDVDLIISHV-----ENNMHIEEIQEDEDNDME---GPDIDVQDD-----EVAET
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         --AASLPALLLARHTEGKIESIPLASTHAQDIVQIITDALLEMFPEITVENLPSYFRLQK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LENHITILPAQEWKPPLPAYDFLSMIDAATSQRGTRKVPKCMKETDVQENDK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PLPLLVLVNLHSGGQVFAFPSDQAII--EENLVL-----WLKKLEA------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PLLILESDGTVNPQYKKAILTLVKQKYLDSFTPCWLNLKN--TPVGRGILRAYF--DPLP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SSPVKLQVMLFSKADDFQKLAQPL----EDIARKFKSKLMFIYVDTTNEN-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DNENASIVTV--VGKTF----DGLVLNSRENVLLEVHTPWCVNCEALSKQIEKLAKHFKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PFLILFGIEAGNKTVVAAFDNNLNSKYLLESDPSPNSIEEFCSGLAHGTVSRYYRSEPVP
                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                    analysis of Arabidopsis that
the regions of 4,504,864 bp
                                                                                                                                                                                                                          4.38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ť
                                                                                                                                                                                                                                                                                                    Thiored.
                                                                                                                                                                                                                                                                                                                  ER_target
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Kaneko
to the E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          15,
15,
21,
                                                                                                                                                                                                               102;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Created)
Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                o T., Kato T., Asam
EMBL/GenBank/DDBJ
                                                                                                                                                                                                                          Score 178;
Pred. No. 0.
                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                    thaliana chromosome 3. I. Sequence 4 bp covered by sixty P1 and TAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                519
                        SG--ELYK------DLILYSSVSVL
                                                                                                                                                                                                               .00027;
les 196;
                                                                                                                                                                                                                                        DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Asamizu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              mizu E., Ta
databases.
                                                                                                                                                                                                                                     Length 519;
                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Tabata
                                                                                                                                                                                                               132;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   490
                                                                                                                                                                                                                                                                                                                                                                                               H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ----G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LAM
                                                                                                                                                                                                               Gaps
                                                    182
                                                                              479
                                                                                                        123
                                                                                                                                 420
                                                                                                                                                           69
                           512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      612
                                                                                                                                                                                     361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               708
                                                                                                                                                                                                               27;
```

```
RESULT
076945
                                                      Qy
                                                                                                                     В
                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCOMPAND DRACE OF THE PROPERTY OF THE PROPERT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qy
   В
                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local S
Matches 65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PDI GENE.
Fasciola hepatica (Liver fluke).
Fasciola hepatica (Liver fluke).
Eukaryota; Metazoa; Platyhelminthes; Trematoda; Digenea;
Echinostomida; Echinostomata; Fascioloidea; Fasciolidae; Fasciola.
NCBI_TaxID=6192;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-NOV-1998 (TrEMBLrel. 08, Created)
01-NOV-1998 (TrEMBLrel. 08, Last sequence update)
01-JUN-2002 (TrEMBLrel. 21, Last annotation update)
Protein disulphide isomerase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TIGREAMS; TIGRO1130; ER_PDI_fam; 1.
TIGREAMS; TIGRO1126; pdi_dom; 2.
PROSITE; PSO0014; ER_TARGET; UNKNOWN_1.
PROSITE; PS00194; THIOREDOXIN; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "Cloning and heterologous expression of Fasciola hepatic protein disulphide isomerase.";
Submitted (JAN-1998) to the EMBL/GenBank/DDBJ databases EMBL; AJ225804; CAA12644.1;
HSSP; P07237; IMEK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Salazar M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    076945;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   076945
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                InterPro; IPR000886; ER_target.
InterPro; IPR000063; Thiored.
Pfam; PF00085; thiored; 3.
PRINTS; PR00421; THIOREDOXIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PROSITE; PSOULD, CTIVE center.
ISOmerase; Redox-active center.
047AF15027C872A4 CRC64;
                                                                                                                                                                                                                                                                                                 376 VELTEETFNATVMASD-SIVLFYAGWQAVSMAFLQSYIDVAVKLKGT-STMLLTRINCAD 433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   769
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      513
   149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         504 INKE 507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            454 LVFARIDASANEHPKLTVDDYPTILLYKTGE-----KENPLKLSTKSSAKDMAVL 503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          243
                                                      493 EYLSGELYKDLILYSSVSVLGLFSPTMKTAKEDFSEAGNYLKGYVITGIYSEEDVLLLST 552
                                                                                                                                                                            434 WSDVCTKQNVTEFPIIKMYKKGENPVSYAGMLGTKDLLKFIQLNRISYPVNITS-IQEAE 492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              604 LPSYFRLQKPLLILFSDGTVNPQYKKAILTLVKQKYLDSFTPCWLNLKNTPVG--RGILR 661
                                                                                                                         91
                                                                                                                                                                                                                                        31 VELTEETFDDEIKKKEFAMVMFYAPWCGHCKAMKPEYARAAAQLKEEGSDIMIAKVDATQ 90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VRKE 772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  HI--TILPAQEWKPPLPAYDFLSMIDAATSQRGTRKVPKCMKETDVQENDKEQHEDKSA- 768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AYF -- DPLPP -- - LPLLVLVNLHSGGQVFAFPSDQAII -- EENLVLWLKKLE -- - AGLEN 711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LLARHTEG-----KIESIPLASTH-----AQDIVQIITDALLEMFPEITVEN 603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KLLFPNLKT-----NNVFVGLVKTEAEKYTSYDGPCQAEKIVEFLNSNKFP-----
QLVDKE---DIVV----
                                                                                                                  HSKLAKSHNVTGYPTLKFYKSGV-WLDYTGGRQTKEIVHWIK-RKVSPAVSVLSTLSEVQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AYYKSQPIPDNQNASVVAVV-----GRTF----DEVVLRSSENVLLEVEKLSQHFKGFEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -----LAMPFLTLFGIEDAKKTVVAAFDNNLNSKYLLESDPSPSNIEEFCFGLAHGTVS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LVTKLTESNTVRVYSSPVKLQVMVFSKTDDFESLAQPLEDIARKFKSKLMLIYIDISNEN 348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GLFSPTMKTAKEDFSEAGNYLKGYVIT------GIYSEEDVL--LLSTKYAASLPAL 561
                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Casais R., Diaz A., Martin J.M., Boga J.A., Parra F.; heterologous expression of Fasciola hepatica putative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                    4.2%; Score 176; DB 5; 23.2%; Pred. No. 0.00035;
-----IAFAEESNEELKQLLE--AVASVYDKYEFGFVSS
                                                                                                                                                                                                                                                                                                                                                                    60; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A
                                                                                                                                                                                                                                                                                                                                                                        99;
                                                                                                                                                                                                                                                                                                                                                                                                                              Length 489;
                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                    56;
                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    402
190
                                                                                                                  148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       288
                                                                                                                                                                                                                                                                                                                                                                    12;
```

	378	Qy 338IQEDEDNDMEGPDIDVQDDEVAETVFRDRKRKLPLELTVEL	
	309	Db 287VENNLRVLEFFGLSKNDAPT	
	337	Qy 289 LRDSLEVNIPQDANVVFKRAEEGVPVEFLVLHDVDLIISHVENNMHIBE	
	286	: :: : : : : : : : : : : : :	
	288	Qy 235 TEVAEDPQQVSTVHLQLGLPLVFIVSQQATYEADRRTAEWVAWRLLGKAGVLLL	
	233	: :: 198 PKIVLFKNFDENRVEYT	
	234	Qy 175 TEIALLESIGSEDVEYAHLYFFHCKLYLDLTQQCRRTLMEQPLTTLNIHLFIKTMKAPLL	
	197	Db 142 CKQFIDKANIAILGFIKDTDSLDLADFEKVADELDDAGFAIANSSEILTEYGITQT	
	174	Qy 129 LQNIENALKGKANI-IFSYVRAIGIPEHRAVMEAGFVYGTTYQFVLT	
	141	GYPTLKFFRNEQPIDFLGE	
	128	Qy 73 RYCGKEKDLMKAYLFKGNILLREFPTDTLFDVNAIVAHVLFALLFSEVKYITNLED	
	90	Db 43 VLVEFYAPWCGHCKALAPEYSEAAKKLKEKGSLIKLAKVDATVEEELA	
	72	QKYFSTLQPGLEELNEAVRPLQDYGISVAKVNC-VK	
29;	aps	Query Match 4.1%; Score 169.5; DB 5; Length 482; Best Local Similarity 22.3%; Pred. No. 0.00099; Matches 117; Conservative 70; Mismatches 170; Indels 167; Ga	
		SQ SEQUENCE 482 AA; 54154 MW; EA2DEZEZBB209658 CRC64;	
		SIGNAL, 1 28	
		DR PROSITE; PS00194; THIOREDOXIN; 2.	
		DR PROSITE; PS00014; ER TARGET; UNKNOWN 1.	
		DR TIGREAMS; TIGRO1130; ER_PDI_fam; 1.	
		DR PRINTS; PRO0421; THIOREDOXIN.	
		DR InterPro; IPR000063; Thiored.	
		DR Interpro; IPR000886; ER_target.	
		Schistosoma mansoni and identification of the tissues of its	
	e of	"Characterization of the complete protein disulfide isomerase gen	
		MEDLINE=94359529; PubMed=8078516;	
		STRAIN-LIBERIA;	
		NCBI_TaxID=6183;	
	idida;	Eukaryota; Metazoa; Piatyhelminthes; Trematoda; Digenea; Strige Schistosomatoidea; Schistosomatidae; Schistosoma.	
	,	Schistosoma mansoni (Blood fluke).	
		Protein disulfide isomerase homologue p	
		01-NOV-1996 (TrEMBLrel 01, Last sequence update)	
		Q26593	
		Db 237PLVVEFTQETASAVFGSAIRKHVVSFVP 264	
		ILFSDGTVNPQYKKAILTLVKQKYLDS	
	236	FKKFDEGRADFDGELTREALIEFMQKET	
	000	QY 333 AXAASERAELLARHTEGALESIKLASTHAQUIVQIITUALLEMEREETIVENER	

```
RESULT
Q91Z81
ID Q9
AC Q9
DT 01
DT 01
DT 01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Qy
                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                    γQ
                                                                                                                                                                                                                                                                                             DЪ
                                                                                                                                                                                                                                                                                                                         QY
                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                              20
                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                          명
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  рЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local S
Matches 64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MGD: MGI:95834; Grp58.
InterPro: IPRO00063; Thiored.
Pfam: PP00085; thiored; 2.
PRINTS; PR00421; THIOREDOXIN.
TICREAMS; TICRO1130; ER_PDI_fam; 1.
TICREAMS; TICRO1136; pdi_dom; 2.
PROSITE: PS00194; THIOREDOXIN; 2.
Q91Z81;
Q91Z81;
Q1-DEC-2001
Q1-DEC-2001
Q1-JUN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q99LF6;
Q99LF6;
01-JUN-2001
01-JUN-2001
01-JUN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Strausberg R.;
Strausberg R.;
Submitted (FEB-2001) to the
Submitted (FEB-2001) to the
EMBL; BC003285; AAH03285.1;
HSSP; P07237; IMEK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Protease; Redox-active center. SEQUENCE 505 AA; 56678 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GRP58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                               144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        310
                                                                                                                                                          251
                                                                                                                                                                                                                             192
                                                                                                                                                                                                                                                                                                                                492
                                                                                                                                                                                                                                                                                                                                                                                                  432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                10
                                                                                                                                                                                                                                                                                                                                                                  86
                                                                                                                                                                                                                                                                                                                                                                                                                                    28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VELTEETFNATVMASDS----IVLFYAGWQAVSMAFLQSYIDVAVKLKGTSTMLLTRINC
                                                                                                                                                           NKDLIQGKDLLTAYYDVD----
                                                                                                                                                                                                                                           E-----FKKFISDKDASVVGFFRDLFSDGHSEFLKAASNLRDNYRFAHTNIES-----
                                                                                                                                                                                                                                                                                                                                                                TANTITCNKYGVSGYPTLKIFRDGEEAGAYDGPRTADGIVS--HLKKQAGPASVPLRTEE
                                                                                                                                                                                                                                                                                                                                                                                    ADWSDVCTKQNVTEFPIIKMYKKGENPVSYAGMLGTKDLLKFIQLNRISYPVNITSIQEA
                                                                                                                                                                                                                                                                                                                                                                                                                                LELTDENFESRVSDTGSAGLMLVEFFAPWCGHCKRLAPEYEAAATRLKG--IVPLAKVDC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATVNEVEDLKVTSFPTLKFYPKNSEEVIDYTGDRSFEALKKFVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     YRIIELGEETTKYKPDTNDYSVSAMSDEVQRTI--DGKVK-PFLMSEEIPSDQTGAVKVL
                                                                                                                                                                                                                             -LVKEYDDNGEGITIFRPLHLANKFEDKTVAYTEKKMTSGKIKKFIQDSIFGLCPHMTED
                                                                                                                                                                                                                                                                                                                               EEYLSGELYKDLILYSSVSVLGLFSPTMKTAKEDFSEAGNYLKG---YVITGIYSEEDVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VCTKQ----NVTEFPIIKMY-KKGENPVSYAGMLGTKDLLKFIQ 475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VGKNYNDVVKDKSKDVFVKLYAPWCGHCKALAPVWDELGETFKNSDTVIAK-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TEETFNATV--MASDSIVLFYAGWQAVSMAFLQSYIDVAVKLKGTSTMLLTRINCADWSD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                to ER-60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ß (Mouse).
Metazoa; Chordata; C
~~+heria; Rodentia; (
 (TrEMBLrel. (TrEMBLrel. (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4.1%; Score 168.5; DB 11; ilarity 22.1%; Pred. No. 0.0013; Conservative 55; Mismatches 125;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (TrEMBLrel. 17,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (TremBLrel. 17,
                                                                      PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRELIMINARY;
                                                                                                                                                                                          LPSYFRLQKPLLILFSDGTVNPQYKKAILTLVKQKYLDS
   19,
19,
21,
Created)
Last sequence
Last annotation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL/GenBank/DDBJ
                                                                                                                                                          YEKNAKGSNYWRNRVMMVAKKFLDA
                                                                      PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Craniata; Vertebrata;
Sciurognathi; Muridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3A7CD1C35981C4B3 CRC64;
   sequence update) annotation updat
                                                                      505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ŗ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 11;
   update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Euteleostomi;
; Murinae; Mus
                                                                                                                                                                                           642
                                                                                                                                                          293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     505;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   45;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                               191
                                                                                                                                                                                                                                                                                                                                                                                                  491
                                                                                                                                                                                                                                                                                                                                                                                                                                85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  43
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   10;
                                 Q RESULT
Q R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                              01-JUN-2002
01-JUN-2002
01-JUN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                  Q8R6N2
                                   SEQUENCE
                                                     Complete
                                                                                                                                                                                                                                                                                                                                                                                                                  Q8R6N2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TISSUE=OVARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID=10029;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        86
   Match
                                     577
```

```
STRAIN-MB4T / JCM11007;
MEDLINE-21992816; PubMed-11997336;
Bao Q, Tian Y, Li W., Xu Z., Xuan Z., Hu S
Chen Y., Xue Y., Li Y., Lai X., Huang L., Dc
Tan H., Chen R., Wang J., Yu J., Yang H.;
"A complete sequence of T. tengcongensis gen
Genome Res. 12:689-700(2002).
EMBL; AE013214; AAM25873.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ERP57 protein.
Cricetulus griseus (Chinese hamster).
Cukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia: Eutheria; Rodentia; Sciurognathi; Muridae; Cricetinae;
                                                                                                                                                                                                                                                                         Thermoanaerobacter tengcongensis.
Bacteria; Firmicutes; Bacillus/Clostridium group; (
Thermoanaerobacteriales; Thermoanaerobacteriaceae;
NCBI_TaxID=119072;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Chung J.Y., Hwang S.O., Lee G.M.;
"The nucleotide sequence encoding the chinese Submitted (SEP-2001) to the EMBL/GenBank/DDBJ EMBL; AY057063; AAL18150.1;
InterPro; IPR000063; Thiored.
Pfam; PF00085; thiored. 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TIGRFAMS; TIGRO1130; ER_PDI_fam; 1.
TIGRFAMS; TIGRO1126; pdi_dom; 2.
PROSITE; PS00194; THIOREDOXIN; UNKN
                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                             MDLB12 OR TTE2769.
                                                                                                                                                                                                                                                                                                                                                                                                ABC-type multidrug/protein/lipid transport system, ATPase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local Similarity hes 62; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LIQSKDLLTAYYDVD-----YEKNAKGSNYWRNRVMMVAKKFLDA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KEYDDNGEGITLFRPSHLANKFEDKTVVYTEQKMTSGKIKRFIQESIFGICPHMTEDNKD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TKYAASLPALLLAR--HTEGKIESIPLASTHAQ----DIVQIITDALLEMFPEITVEN--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EEYLSGELYKDLILYSSVSVLGLFSPTMKTAKEDFSEAGNYLKGYVITGIYSEEDVLLLS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TANTINTCNKYGVSGYPTLKIFRDGEEAGAYDGPRTADGIVS--HLKKQAGPASVLLRSEE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADWSDVCTKQNVTEFPIIKMYKKGENPVSYAGMLGTKDLLKFIQLNRISYPVNITSIQEA 491
                                                       proteome.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ---FKKFISDKDASVVGFFRDLFSDGHSEFLKAASNLRD---NYRFAHTNVESLV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    505 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -LPSYFRLQKPLLILFSDGTVNPQYKKAILTLVKQKYLDS
                                                                                                                                                                                                                                                                                                                                                                                                                (TrEMBLrel. 21, Created)
(TrEMBLrel. 21, Last sequence update)
(TremBLrel. 21, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRELIMINARY;
                                        AA;
                                        66097 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      56796 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4.0%;
  3.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        57;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 166.5; DB 11; Pred. No. 0.0017;
  Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pred. No. 0.00
7; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5F2E38C30794DB76 CRC64
                                        BA6642DF1FBE7545 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        UNKNOWN_2
  162;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                577
                                                                                                                                                                             Hu
                                                                                                                  genome.";
  DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A
                                                                                                                                                         Dong
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          128;
  16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         hamster ERP57 databases.
                                                                                                                                                         Dong
X., №
Length
                                                                                                                                                                                                                                                                                                                    Clostridia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length
                                                                                                                                                             Ma
                                                                                                                                                                                                                                                                                                  Thermoanaerobacter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              293
                                                                                                                                                           ٧.,
  577;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 505;
                                                                                                                                                             Ling
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           protein.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          551
```

9,

Best

19.6%;

```
RESULT
Q91815
ID 05
AC Q5
AC Q6
AC Q6
AC Q6
AC Q7
AC Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Вр
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                             Q91815
Q91815;
Q1-B15;
Q1-QCT-2000 (TrEMBLrel. 15,
Q1-QCT-2000 (TrEMBLrel. 19,
Q1-DEC-2001 (TrEMBLrel. 19,
                                                                   Fugu rubripes (Japanese pufferfish) (Takifugu rubripes).

Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;

Actinopterygii; Neopterygii; Teleostei; Buteleostei; Neoteleostei;

Acanthomorpha; Acanthopterygii; Percomorpha; Tetraodontiformes;

Tetraodontidae; Takifugu.
  SEQUENCE FROM N.A.
                                                                                                                                                                                                                           Protein disulfide isomerase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    694
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   142
                                                                                                                                                                                                                                                                                                                                                                                                       13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local Similarity hes 142; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  _
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 QLNRISYPVNITSIQEAEE---YLSGELYKDLILYSSVSVLGLFSPTMKTAKED-----F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     --TIKGEMT-LGTMIACV-----QLTNNIIMPIYSMGQN------LNRIL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MKAYLFKGNILLREFPTDTLFDVNAIVAHVLFALLFSEVKYITNLEDLQNIENALKGKAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  IVEKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TSQRG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DSFTPCWLNLKNTPVGRGILRAYFDP-LPPLPLLVLVNLHSGGQVFAFPSDQ-----AI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KKDLFKIIT------LLHQN-----VFIFDGTV-----KDNITLFNDRYT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AQDIVQIITDALLEMFPEITVENLPSYFRLQKPLLILFSDGTVNPQYKKAILTLVKQKYL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEAGNYLKGYVITGIYSEEDVLLLSTKYA--ASLPALLLARHT----EGKIESIPLASTH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SLKSISQKIN-EVLQEKEERNDYIPVKSFNDSIEFKNVS----FSYTGETKALDNINFTI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AVKLKGTSTMLLTRINCADWSDVCTKQNVTEFPIIKMYKKGENPVSYAGMLGTKDLLKFI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -----VEDKKLKYSVLLN---TSDTMSEILSSFIFLSVF----AVGLYF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KIAKMRNDYSESLELFTIESKDTLTGLEVIKSFGIEDKVHEKFSKVNED------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NVVFKRAEEGVPVEFLVLHDVDLIIS------HVENNMHIEEIQEDEDNDMEGPDIDVQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GSAVGFVAALISLFILSYKIT----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HCKLVLDLTQQCRRTLMEQPLTTLNIHLFIKTMKAPLLTEVAEDPQQV-------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 IIFSYVRAIGIPEHRAVMEAGFVYGTT-YQFVLTTEI----ALLESIGSEDVEYAHLYFF 196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MREFLFK---YKKEFVLAVFFLVASVLINIYFAFIYKKLIDVATTRDLVKFYSVV--KFA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ITNASILALDEATAALDNETAYMIEKTILDMDITAIVVTHRLWSELLKRYDEIIVLRDGR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  IEENLVLWLKKLEAGLENH------IT--ILPAQEWKPPLPAYDFLSMI-DAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -STVHLQLGLPLVFIVSQQATYEADRRTAEWVAWRLLGKAGVLLLLRDSLEVNIPQ--DA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -----ALVGTSGAGKSTILKLLLKQYENYEGEIKLDGIELRRID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EVVRAAKIAGLGPLLEKLPEGILSDVGEGGKLLSGGERQRIAIARSI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -----FNEVNTGKYISIISNDVKIVEEDYFNNFFRLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ---VGWLNRTTRFHYMKKTLIYLKDRLFRAIIKKDVEH-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   111;
                                                                                                                                                                                                                     Last sequence update)
Last annotation update)
ER-60 (EC 5.3.4.1) (Fragment).
                                                                                                                                                                                                                                                                                                      Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pred. No. 0.0045;
1; Mismatches 224;
                                                                                                                                                                                                                                                                                                                                                        PRT;
                                                                                                                                                                                                                                                                                                                                                        369
                                                                                                                                                                                                                                                                                                                                                        AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              --VMIILMAILSVIIPRIFDD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                248;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     33
;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 뮹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δÃ
```

```
RESULT

OPERATE

OPER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Isomerase;
VARIANT
NON_TER
SEQUENCE
                                                                                                                                                                                            Submitted (NOV-2000) to the EMB
EMBL; AF325211; AAG45936.1; -.
HSSP; P07237; IMEK.
InterPro; IPR000886; ER_target.
InterPro; IPR000063; Thiored.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q9GPH2
Q9GPH2;
Q1-MAR-2001 (TrEMBLrel. 16,
01-MAR-2001 (TrEMBLrel. 16,
01-JUN-2002 (TrEMBLrel. 21,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         "Structure of the ubiquitous mitochondrial creatine kinase gene and its linkage to the protein disulfide isomerase ERp60 gene are conserved among teleost fish Takifugu rubripes, mouse and human."; Submitted (JUN-2000) to the EMBL/GenBank/DDBJ databases.

EMBL; AF274502; AAF78087.1; -
HISSP; P07237; LMEK.
                                                                        PRINTS; PRO0421; THIOREDOXIN.
TIGRAMS; TIGRO1130; EM_PDI_fam; 1.
TIGRRAMS; TIGRO1126; pdi_dom; 2.
PROSITE; PS00014; ER_TARGET; UNKNOWN_1.
                                                                                                                                                                          InterPro; IPR000063; Thior Pfam; PF00085; thiored; 2.
                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A. GOO T.W., Yun E.Y.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta; Pterygota; Neoptera; Endopterygota; Lepidoptera; Glossata; Di
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PDI.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRINTS; PR00421; THIOREDOXIN. PROSITE; PS00194; THIOREDOXIN; 1.
                                                                                                                                                                                                                                                                                                                          Kwon O.-Y
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bombyx mori (Silk moth)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Protein disulfide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pfam;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Fu R., Jiang M., Brenner S.;
                                                   PROSITE; PS00194; THIOREDOXIN;
                                                                                                                                                                                                                                                                                                                                                                                                                         NCBI_TaxID=7091;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         InterPro; IPR000063; Thiored.
                            [somerase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             376 VELTEETFNATVMASDSIVL-FYAGWQAVSMAFLQSYIDVAVKLKGTSTMLLTRINCADW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MGKDLLVAYYDVDYERNPKGSNYWRNRVMKVAKTFLD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LQKPLLILFSDGTV--NPQ---YKKAILTLVKQKYLD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LSGELYKDLILYSSVSVLGLFSPTMKTAKEDFSEAGNYLKG-YVITGIYSEEDVLLLSTK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LEFTDNDFESKIGDHEIILVEFFAPWCGHCKRLAPEYEKAATALKG--VVPLAKVDCTSN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              YAASLPALLLARHTEGKIESIPLASTH----AQDIVQIITDALLEMFPEITVENLPSYFR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SDVCTKQNVTEFPIIKMYKKGENPVSYAGMLGTKDLLKFIQLNRISYPVNITSIQEAEEY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VGPEGIVLFRPPTLKNKFEDSSVKYSEEKYTSNKIKRFIQDNVLGFCPHMTEDNKDQL--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SNICSKYQVSGYPTLKVFRDGEESGAYDGPRTSDGIVTYFKKQVGPASVALAGEEELQKF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PF00085; thiored;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
       494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Redox-active center.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -----DSSVVGFFADDKSTAQVEFLKAASALRDKYRFA--HTNAEVLLKSQN
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bombycidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ΑA;
     AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               isomerase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           369
     55588 MW;
                                                                                                                                                                                                                                                                                                                                              Hwang J.S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  41237 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                Endopterygota;
lae; Bombyx.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Created)
Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                60;
                                                                                                                                                                                                                                                                                                   EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 158;
Pred. No. (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   T ->
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1438527CCAD01E55 CRC64;
                                                      Ņ
     084609DD56DC88DD CRC64;
                                                                                                                                                                                                                                                                                                                                                 Kang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                 S.W.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0.0043;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A
                                                                                                                                                                                                                                                                                                                                                    Lee
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  130;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   update)
                                                                                                                                                                                                                                                                                                   databases
                                                                                                                                                                                                                                                                                                                                                    K.S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Glossata; Ditrysia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 138
```

9;

```
RESULT 15
Q9C1Z8
AC Q9C1Z
AC Q9C1Z
DT 01-JU
DT 0
      БР
                                                            9
                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                           20
                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL; AJ302014; CAC33587.1; -.
HSSP; P07237; 1MEK.
InterPro; IPR000886; ER_target.
InterPro; IPR000863; Thiored.
Pfam; PF00085; thiored; 2.
PRINTS; PR00421; THIOREDOXIN.
TIGREAMS; TIGR01130; ER_PDI_fam; 1.
TIGREAMS; TIGR01130; ER_PDI_fam; 1.
TIGREAMS; TIGR01126; pdi_dom; 2.
PROSITE; PS00014; ER_TARGET; UNKNOWN_1.
PROSITE; PS000194; THIOREDOXIN; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Isomerase;
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pichia pastoris (Yeast).
Eukaryota; Fungi, Ascomycota; Saccharomycotina; Saccharomycetes;
Saccharomycetales; Saccharomycetaceae; Pichia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q9C1Z8 PRELIMINARY; PRT; 517 AA. Q9C1Z8; 01-JUN-2001 (TrEMBLrel. 17, Created) 01-JUN-2001 (TrEMBLrel. 17, Last sequence update) 01-JUN-2002 (TrEMBLrel. 21, Last annotation update) Protein disulphide isomerase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      disulfide isomerase.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Warsame A.A., Vad R., Kristensen T., "Characterization of a gene encoding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Biochem. Biophys. Res. Commun. 281:1176-1182(2001). EMBL; AJ302014; CAC33587.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
MEDLINE=21139750; PubMed=11243858;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NCBI_TaxID=4922;
156 TIA-EAKEPVI----VQVL------PEDASNLESNTTFYGVAGTLREKFTFVSTKS
                                                                                                                                                                                                     435
                                                                                                                                                                                                                                                                                                                              376 VELTEETFNATVMASDSIVL-FYAGWQAVSMAFLQSYIDVAVKLKGTSTMLLTRINCADW 434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               138
                                                                   494 YLSGELYKDLILYSSVSVLGLFSPTMKTAKEDFSEAGNYLKGYVITGIYSEE--DVLLLS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    225 AWVFVQSMPTIVEFSHETASKIFGGKIKYHLLIFLSKKNGDFEKYLEDLKP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            546 DVLLLSTKYAASLPALLLARHTEGKIESIPLASTHAQDIVQIITDALLEMFPEITVENLP 605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        486 TSIQEAEEYLSGELYKDLILYSSVSVLGLFSPTMKTAKEDFSEAGNYLKGYVITGIYSEE 545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        426 LTRINCADWSDVCTKONVTEFPIIKMYKKGENPVSYAGMLGTKDLLKFIQLNRISYPVNI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                369 KLPLELTV-ELTEETFNATVMASDSIVL-FYAGWQAVSMAFLQSYIDVAVKL-KGTSTML 425
                                                                                                                                         96
                                                                                                                                                                                                                                                                  36 VKLTEATFESFITSNPHYLAEFFAPWCGHCKKLGPELVSAAEILKDNEQVKIAQIDCTEE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        79 LAKVDATQEQDLAESYGVRGYPTLKFFRNG-SPIDYSGGRQADDIISWLKKKTGPPAVEV 137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    19 EVPTEENVLVLSKANFETVISTTEYILVEFYAPWCGHCKSLAPEYAKAATKLAEEESPIK 78
                                                                                                                                                                                           SDVCTKQNVTEFPIIKMYK-KGENPVSYAGMLGTKDLLKFIQLNRISYPVNITSIQEAEE
                                                                                                                               KELCQGYEIKGYPTLKVFHGEVEVPSDYQGQRQSQSIVSYMLKQSLPPVSEINATKDLDD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SYFRLOK-PLLILFSDGTVNP-----QYKKAILTLVK----QKYLDSFTP 645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TSAEQA-----KELIDANTVIVFGFFSDQSSTRAKTFLSTAQVVDDQVF-AIVSDE 187
                                                                                                                                                                                                                                                                                                                                                                                                 ch 3.6%; Score 150.5; DB 3; Length 517; I Similarity 22.5%; Pred. No. 0.025; 79; Conservative 64; Mismatches 161; Indels 47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Redox-active center. 517 AA; 57788 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ----KELEAEDEDVVLFKNFEEKRVKYEDE-----EITEDLLN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3.7%; Score 154; DB 5; Length 494; 22.0%; Pred. No. 0.013; tive 54; Mismatches 125; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4C085C5534B65583 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Oyen T.B.;
a Pichia pastoris
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       275
                                                                                                                                                                                                                                                                                                                                                                                                 47;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   48;
                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           485
                                                                   551
                                                                                                                                                                                                  493
                                                                                                                                  155
                                                                                                                                                                                                                                                                     95
                                                                                                                                                                                                                                                                                                                                                                                                 15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   11;
```

Search completed: March 13, 2003, 17:14:05
Job time: 41 secs

Ŋ

```
JOURNAL
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 3
AK097748
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                           FEATURES
                                                                                                                                                                                              COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOURCE
                                                                                                                                                                                                                                                                                                  TITLE
                                                                                                                                                                                                                                     JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2401
                                                                               source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGCTAATTAAGTACCAGCACATAGAAACATGAAATTGCTTAGTCATTGTACCTTTGTCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGAGTGAACTCTAAATATAGGGTTGTAGTAATAAAACATCATTAGCCTAATTATTAGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCATGTGATGCCTGATTAAACTCATTTTCATTTGCTTTTATTTCTAATATGGGAACAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCATGTGATGCCTGATTAAACTCATTTTCATTTTGCTTTATTTCTAATATGGGAACAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGCTAATTAAGTACCAGCACATAGAAACATGAAATTGCTTAGTCATTGTACCTTTGTCAG
                                                                                                 Direct Submission

Submitted (04-JUL-2002) Takao Isogai, FLJ Project(HRI Team); 2-6-7

Kazusa-Kamatari, Kisarazu, Chiba 292-0812, Japan

(E-mail:genomics@hii.co.jp, Tel:81-438-52-3975, Fax:81-438-52-3986)

REDO human cDNA sequencing project supported by Ministry of Economy, Trade and Industry of Japan; cDNA full insert sequencing: Research Association for Biotechnology (RAB); cDNA library construction: Helix Research Institute (HRI) (supported by Japan Key Technology Center etc.); 5'- 6 3'-end one pass sequencing: RAB, HRI, and Biotechnology Center wational Institute of Technology and Evaluation; clone selection for full insert sequencing: HRI and RAB, annotation: HRI and RAB.
                                                                                                                                                                                                                                                                                                                        Oshima, A., Takahashi-Fujii, A., Tanase, T., Imose, N., Takeuchi, K., Arita, M., Musashino, K., Yuuki, H., Hara, H., Sugiyama, T., Irie, R., Otsuki, T., Sato, H., Wakamatsu, A., Ishii, S., Yamamoto, J., Isono, Y. Kawai-Hio, Y., Saito, K., Nishikawa, T., Kimura, K., Yamashita, H., Matsuo, K., Nakamura, Y., Sekiné, M., Kikuchi, H., Kanda, K., Wagatsuma, M., Murakawa, K., Kanehori, K., Sugiyama, A., Kawakami, B., Suzuki, Y., Sugano, S., Nagahari, K., Masuho, Y., Nagai, K. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AK097748.1 GI:21757613
Oligo capping; fis (full insert sequence).
HOMO sapiens testis CDNA to mRNA, clone_lib:TESTI2
clone:TESTI2039177.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens cDNA FLJ40429 fis, AK097748
                                                                                                                                                                                                                                                                                                    Isogai,T.
NEDO human
                                                                                                                                                                                                                                                                                                                                                                                                      Oshima, A.,
                                                                                                                                                                                                                                                            2 (bases 1 to 2747)
Isogai, T. and Yamamoto, J.
                                                                                                                                                                                                                                                                                   Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; I
Mammalia; Eutheria; Primates; Catarrhini; Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens
        /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="TESTI2039177"
/tissue_type="testis"
/clone_lib="TESTI2"
                                                                                          Ocation/Qualifiers
                                                                                                                                                                                                                                                                                                cDNA sequencing project
 vector:
PME18SFL3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       mRNA linear
clone TESTI2039177.
                                                                                                                                                                                                                                                                                                                                                                                                                                   Euteleostomi; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    15-JUL-2002
                                                                                                                                                                                                                                                                                                                                                                              Isono,Y.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4505
          Ş
                                     밁
                                                          Ş
                                                                                       밁
                                                                                                             Ş
                                                                                                                                                                Ş
                                                                                                                                       ₽
                                                                                                                                                                                           В
                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                       9
                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                           9
                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                            B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          믕
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Qy
             1045
                                      901
                                                             985
                                                                                       841
                                                                                                                 925
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           139
                                                                                                                                          781
                                                                                                                                                                                           721
                                                                                                                                                                                                                     805
                                                                                                                                                                                                                                                661
                                                                                                                                                                                                                                                                                                  601
                                                                                                                                                                                                                                                                                                                           589
                                                                                                                                                                                                                                                                                                                                                    541
                                                                                                                                                                                                                                                                                                                                                                               625
                                                                                                                                                                                                                                                                                                                                                                                                         481
                                                                                                                                                                                                                                                                                                                                                                                                                                   565
                                                                                                                                                                                                                                                                                                                                                                                                                                                            421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ë
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61
```

```
Query Match
Best Local Sim
Matches 2588;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGTTTATTAAGACAATGAAAGCACCTCTGTTGACTGAAGTTGCTGAAGATCCTCAACAAG
                                       GCTCTGAGGATGTGGAATATGCACATCTCTACTTTTTTCATTGTAAACTAGTCTTGGACT
                                                                                                                                                     GCTCTGAGGATGTGGAATATGCATATCTCTACTTTTTTCATTGTAAACTAGTCTTGGACT
                                                                                                                                                                                                            CCAACCTGGAAGACCTTCAGAACATAGAAAATGCTCTGAAAGGAAAAGCAAATATTATAT
                                                                                                                                                                                                                                                                                                                                      CATATTTATTCAAGGGCAACATATTGCTCAGAGAATTCCCTACTGACACCTTGTTTGATG
                                                                                                                                                                                                                                                                                                                                                                                                            CATATTTATTCAAGGGCAACATATTGCTCAGAGAATTCCCTACTGACACCTTGTTTGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTAATTGTGTCAAAGAAGAAATATCAAGATACTGTGGAAAAGAAAAGGATTTGATGAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAGGAAAAGCCTCTTTAGCTTATTTTTGTCAAGCTGATTCCCCCAAGAACATCTGTATTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGCCAACAGTAAACTCTTTACCAGAACTGAGTCCTCAGAAATATTTTAGTACATTGCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTTCCGGCTTCAATGTCTTTAGAGTTGGGATCTCTTTTGTCATAATGTGCATTTTTTACA 438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGAAAATAAAGAATTAACAGCAGATACAGAGGACAGCATGGAAGTGTTGTCTTAGGAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TCTCATATGTAAGAGCCATTGGAATACCAGAGCACAGAGCAGTCATGGAAGCCGGTTTTG
                                                                                                                                                                                                                                                                                                                           TGAATGCCATTGTCGCCCATGTTCTCTTTGCTCTTTTTTTAGTGAAGTGAAATATATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                        TTAATTGTGTCAAAGAAGAAATATCAAGATACTGTGGAAAAGAAAAGATTTGATGAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAGG-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGCCAACAGTAAACTCTTTACCAGAACTGAGTCCTCAGAAATATTTTAGTACATTGCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTTCCGGCTTCAATGTCTTTAGAGTTGGGATCTCTTTTGTCATAATGTGCATTTTTTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGAACACAGCAGTGAAAAAACAGACAAAATCCGCTCAGATACAACTGCAGCTGATAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGAACACAGCAGTGAAAAAACAGACAAAATCCGCTCAGATACAACTGCAGCTGCATAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATAGATCATCAGTAGAAAACTTCTTGAAGTTGTTCAAGAAAATTTGAAAGTAGCAAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  53.38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ი
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DΒ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ----TC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                1104
                                                                       1044
                                          960
                                                                                                                                                                                                                                                                    720
                                                                                                                                                                                                                                                                                                                                                                                                             684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        498
                                                                                                 900
                                                                                                                                                      840
                                                                                                                                                                                                            780
                                                                                                                                                                                                                                        864
                                                                                                                                                                                                                                                                                              804
                                                                                                                                                                                                                                                                                                                           660
                                                                                                                                                                                                                                                                                                                                                    744
                                                                                                                                                                                                                                                                                                                                                                                 600
                                                                                                                                                                                                                                                                                                                                                                                                                                          540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           240
```

₽ . Š Ş Ş 밁 ð 밁 õ 밁 В Š 밁 Ş 밁 ð 밁 Ş 밁 Š 밁 S 멹 Вb Ωy 밁 δÃ 문 Ş 밁 δð. 밁 밁 Ş 1105 1345 1081 1165 1021 1141 1225 1441 1381 1465 1321 1405 1261 1201 1681 1632 1561 1632 1525 1285 961 1741 1663 1963 1921 1903 1861 1843 1801 2041 1981 TGTTTATTAAGACAATGAAAGCACCTCTGTTGACTGAAGTTGCTGAAGATCCTCAACAAG GAGATAGGAAGAAATTACCTTTGGAACTTACAGTGGAACTAACAGAGAGAACATTTA GAGTTCTACTCTTAAGGGACTCTTTGGAAGTGAACATTCCTCAAGATGCTAATGTGG CTTATGAAGCTGATAGAAGAACTGCAGAATGGGTTGCTTGGCGTCTTCTGGGAAAAGCAG ATGACATGGAAGGTCCAGATATAGATGTTCAGGATGATGAAGTGGCAGAAACTGTTTTCA TCCTAAAATTTATCCAGCTCAACAGGATTTCATATCCAGTGAATATAACATCGATCCAAG ATCTTGTCTGCTCCTTACAGCACACGTGGCTGGCAGAGAAGGGGAAGACAGAGCGGCCATC GAAACTACCTAAAAGGATATGTTATCACTGGAATTTATTCTGAAGAAGATGTTTTGCTAC CAGTATTGGGACTATTTAGTCCAACCATGAAAACAGCAAAAGAAGATTTTAGTGAAGCAG AAGCAGAAGAATATTTAAGTGGGGAATTATATAAAGACCTCATCTTGTATTCTAGTGTGT AGATGTACAAGAAAGGCGAGAACCCAGTATCTTATGCTGGAATGTTAGGAACCGAAGATC AGATGTACAAGAAAGGCGAGAACCCAGTATCTTATGCTGGAATGTTAGGAACCAAAGATC ACTGTGCAGATTGGTCTGATGTATGTACTAAGCAAAATGTTACTGAATTTCCTATCATAA ACTGTGCAGATTGGTCTGATGTATGTACTAAGCAAAATGTTACTGAATTTCCCTATCATAA TTGGAAACGTCTAGTCCTTAGTTCCTGCCGGCACATCTACTATGCTTCTTACTAGAATAA -GGCACATCTACTATGCTTCTTACTAGAATAA 1464 1140 1224 1080 1164 1440 1320 1344 1200 1284 1020 1500 1584 1902 1860 1842 1800 1782 1740 1680 1662 1620 1631 1560 1631 1980 2082 2100 2040 2022

1

Ş Ş 밁 οy В õ õ В RESULT 4 AC025659/c LOCUS δ δÃ В Š ₽ õ В 밁 REFERENCE AUTHORS TITLE JOURNAL REFERENCE AUTHORS ACCESSION VERSION KEYWORDS SOURCE ORGANISM S В δ В B 밁 DEFINITION 2203 2161 2143 2101 2083 2281 2221 2401 2341 2323 2263 2461 2443 2383 2701 ATGCACTACTGGAAATGTTTCCGGAAATCACTGTGGAAAATCTTCCCAGTTATTTCAGAC AAATAGAGAGCATCCCACTAGCTAGCACACATGCACAAGACATAGTTCAAATAATAACAG CAATATTGACACTGGTAAAGCAGAAATACTTGGATTCATTTACTCCATGCTGGTTAAATC TTCCTCTTCTTGTTTTGGTGAATCTGCATTCAGGTGGCCAAGTATTTGCATTTCCTTCAG TTCTAAGTATGATAGATGCCGCAACATCTCAACGTGGCACTAGGAAAGTTCCCCAAGTGTA ACCAGGCTATAATTGAAGAAAACCTTGTATTGTGGCTGAAGAAATTAGAAGCAGGACTAG Unpublished

(hases 1 to 161100)

(hases 2 tien, V. Beda, F. Barna, N., Bastien, V., Beda, F., Anderson, S., Baldwin, J., Barna, N., Bastien, A., Barna, B., Choepel, Y., Collangelo, M., Collicampopiano, A., Coastle, A., Choepel, Y., Collangelo, M., Colligamore, A., Cooke, P., Dearrellano, K., Dewar, K., Diaz, J. Collymore, A., Cooke, P., Dearrellano, K., Dewar, K., Diaz, J. Collymore, A., Cooke, P., Doarlelano, K., Goyette, M., Graham, L., Galagan, J., Gardyna, S., Ginde, S., Goyette, M., Graham, L., Galagan, J., Gardyna, S., Ginde, S., Goyette, M., Graham, L., Gr Grand-Pierre, N., Grant, G., Hagos, B., Howland, J.C., Iliev, I., Johnson, R., Klein, J., LaRocque, K., Lamazares, R., Eukaryota; Metazoa; Chordata; Cr Mammalia; Eutheria; Primates; Ca 1 (bases 1 to 161100) Birren, B., Linton, L., Nusbaum, C. Homo sapiens, clone RP11-263N17 unordered pieces.
AC025659
AC025659.3 GI:8705128
AC025659.3 GI:8705128
HTG; HTGS_PHASE1; HTGS_DRAFT.
HOMO sapiens. AC025659 161100 bp Homo sapiens clone RP11-263N17, Homo sapiens yna,S., Ginde,S., Goyette,m., ... yna,S., Ginde,S., Heaford,A., Horton, Grant,G., Hagos,B., Heaford,A., Horton, iev,I., Johnson,R., Jones,C., Kann,L., ! iev,I., Johnson,R., Landers,T., Lehocz! Chordata; Craniata; Vertebrata; Euteleostomi; Primates; Catarrhini; Hominidae; Homo. WORKING and Lander linear HTG DRAFT SEQUENCE, 'n 2729 2747 nn, L., Karatas, A., Lehoczky, J., , Collins, 15 Allen, N., 2142 2160 2262 2220 2442 2400 2382 2322 2280 2682 2622 2580 2562 2502 2460 2700 2640 JUN-2000 ŝ

g 5

4266

GCATGTGATGCCTGATTAAACTCATTTCATTTGCTTTTATTTCTAATATGGGAACAATG

4325 2640

```
RESULT 3
ABV219
XX ABV2
XX ABV2
XX ABV2
XX HUMA
XX HUMA
XX HUMA
XX HOMO
DE HUMA
XX HOMO
DE HUMA
XX HOMO
PN WO20
PN WO20
PN 117-F
PR 117-F
PR 117-F
PR 118-G
PR 13-G
PR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             17-FEB-2000;
16-MAR-2000;
25-MAY-2000;
09-JUN-2000;
18-JUL-2000;
13-DEC-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2761
                                                                                                                                                       The invention relates to an isolated nucleic acid molecule (I) com a nucleotide sequence given in Tables 1-9 (ABV00010-ABV62213) of t. specification or its complement. (I) is useful for:
(a) assessing whether a patient is affilicted with prostate cancer;
(b) monitoring the progression of prostate cancer in a patient;
(c) assessing the efficacy of a test compound to inhibit prostate cancer in a patient;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human; prostate pharmacogenomic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              13-SEP-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ABV21967;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ABV21967
                                                                                                                                                                                                                                                                                                                                                            Novel isolated nucleic acid molecule associated with cancerous state prostate cells and correlating with presence of prostate cancer, usef for detecting presence of prostate cancer, stage of prostate cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Schlegel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (MILL-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        20-FEB-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             23 - AUG - 2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WO200160860-A2

(e) selecting a composition for inhibiting prostate cancer in a patien
(f) assessing the prostate cell carcinogenic potential of a compound;
(g) determining whether prostate cancer has metastasized in a patient;
(h) assessing the aggressiveness or indolence of prostate cancer in a

                                                                                                                    (d) assessing the efficacy of a therapy for
in a patient;
                                                                                                                                                                                                                                                                                                                         Claim 1;
                            patient;
is also useful
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGCTAATTAAGTACCAGCACATAGAAACATGAAATTGCTTAGTCATTGTACCTTTGTCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              prostate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MILLENNIUM PREDICTIVE MEDICINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   æ
                                                                                                                                                                                                                                                                                                                         Page
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2000US-183319P.
2000US-189862P.
2000US-207454P.
2000US-211314P.
2000US-21131P.
2000US-255281P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2001WO-US05171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Endege
                                                                                                                                                                                                                                                                                                                         3747;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                marker;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       expression marker cDNA
        as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cDNA;
                                                                                                                                                                                                                                                                                                                     11750pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ĕ,
        ۵
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cytostatic;
gene; ss.
        pharmacodyanamic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Monahan
                                                                                                                                                                                                                                                                                                                         English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ΒP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  carcinogen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         21958
        or
                                                                                                                                             inhibiting prostate
        pharmacogenomic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  pharmacodyanamic
                                                                                                                                                                                                                                                                                                                                                                cer, useful
            marker
                                                                                                                                                                                                                                                                  of the
                                                                                                          patient;
                                                                                                                                               cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      marker;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  B
                    Š
                                                                     Дb
                                                                                                        δÃ
                                                                                                                                                 В
                                                                                                                                                                              δõ
                                                                                                                                                                                                                             B
                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                       Вb
                                                                                                                                                                                                                                                                                                                                                                                                                         δõ
```

```
Query Match
Best Local Sin
Matches 2627;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             1904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence
                                                                                                                                                                                                                                        2264
                                                                                                                                                                                                                                                                                                               2144
                                                                                                                                                                                                                                                                                                                                                                                      2024
                   2624
                                                     2564
                                                                                       2504
                                                                                                                             2444
                                                                                                                                                                2384
                                                                                                                                                                                                    2324
                                                                                                                                                                                                                                                                            2204
                                                                                                                                                                                                                                                                                                                                 438
                                                                                                                                                                                                                                                                                                                                                    2084
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  138
                                                                       858
                                                                                                                                                                                  678
                                                                                                                                                                                                                     618
                                                                                                                                                                                                                                                          558
                                                                                                                                                                                                                                                                                               498
                                                                                                                                                                                                                                                                                                                                                                     378
                                                                                                                                                                                                                                                                                                                                                                                                        318
                                                                                                                                                                                                                                                                                                                                                                                                                                           258
                                    918
                                                                                                          798
                                                                                                                                               738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      78
                                                                                                                                                                                                                                                                                                                                                                   AAACTACCTAAAAGGATATGTTATCACTGGAATTTATTCTGAAGAAGATGTTTTGCTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GATGTACAAGAAAGGCGAGAACCCAGTATCTTATGCTGGAATGTTAGGAACCAAAGATCT
                                                                                                          CCAGGCTATAATTGAAGAAAACCTTGTATTGTGGCTGAAGAAATTAGAAGCAGGACTAGA
                                                                                                                                            TCAGAAACCATTATTGATTTGTTCAGTGATGGCACTGTAAATCCTCAATATAAAAAAGC
                                                                                                                                                                                                                                                                                                                                AGTATTGGGACTATTTAGTCCAACCATGAAAACAGCAAAAGAAGATTTTAGTGAAGCAGG
AAAGAATACTCCAGTGGGGAGAGGAATCTTGCGGGCATATTTTGATCCTCTGCCCCCT
                                                                                                                                                                                                                               AATATTGACACTGGTAAAGCAGAAATACTTGGATTCATTTACTCCATGCTGGTTAAATCT
                                                                                                                                                                                                                                                                                                       TGCACTACTGGAAATGTTTTCCGGAAATCACTGTGGAAAATCTTCCCAGTTATTTCAGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGCAGAAGAATATTTAAGTGGGGAATTATATAAAGACCTCATCTTGTATTCTAGTGTGTC
                                   AAAGAATACTCCAGTGGGGAGAGGAATCTTGAGGGCATATTTTGATCCTCTGCCTCCCCT
                                                                                                                                                                                                                                                          TCAGAAACCATTATTGATTTTGTTCAGTGATGGCACTGTAAATCCTCAGTATAAAAAAGC
                                                                                                                                                                                                                                                                                              TGCACTACTGGAAATGTTTCCGGAAATCACTGTGGAAAATCTTCCCAGTTATTTCAGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGCAGAAGAATATTTAAGTGGGGAATTATATAAAGACCTCATCTTGTATTCTAGTGTGTC
                                                                                                                                                                                                                      AATATTGACACTGGTAAAGCAGAAATACTTGGATTCATTTACTCCATGCTGGTTAAATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2905 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                921 A; 509 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      56.1%;
97.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pred. NO. 0;
1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 2540.4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ŏ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                T; 2 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DВ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      137
                                                                                                                                                                                                                                                                                                                                                     2143
                                                                                                                                                                                                                                                                                                                                                                                        2083
                                                                                                                                                                                                                                                                                                                                                                                                                           2023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                1963
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1903
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1783
                     2683
                                       977
                                                       2623
                                                                          917
                                                                                          2563
                                                                                                            857
                                                                                                                               2503
                                                                                                                                                                  2443
                                                                                                                                                                                                     2383
                                                                                                                                                                                                                        677
                                                                                                                                                                                                                                          2323
                                                                                                                                                                                                                                                             617
                                                                                                                                                                                                                                                                               2263
                                                                                                                                                                                                                                                                                                 557
                                                                                                                                                                                                                                                                                                                 2203
                                                                                                                                                                                                                                                                                                                                    497
                                                                                                                                                                                                                                                                                                                                                                       437
                                                                                                                                                                                                                                                                                                                                                                                                          377
                                                                                                                                                                                                                                                                                                                                                                                                                                             317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 257
                                                                                                                                                 797
                                                                                                                                                                                    737
```

밁

1037

Oy 3764 TACAAGTTATATGGCT 	Oy 4064 GCTCTACTGTATTTTTTTTTTTTTTTTTTTTTTTTTTTT	RESULT 4 ABV27799 1D ABV27799 XX AC ABV27799; XX DT 16-SEP-2002 (first AX XX DY MWAN PROSTATE exprexX XX WHUMAN; prostate canc XX	
:	<u> </u>		
27. 10 28 28 28 29 29 29	C 1337 A 3043 A 1397 A 1397 T 1457 T 1457 T 1223 T 1223 T 1223	33 33 33	A 3583 A 1937 A 1997 A 1997 T 3703 T 2057 T 2057
TTTAAAG TTTAAAG TAATTTT TAATTTT TTAAAGA ATATAAG ATATAAG	AGCAGGG TATAGAA TATAGAA TATAGAA TACATAT TACATAACT TATAACT ATTAACT ATTAACT ACTCCACACACA	AAATCAG 	TCTGCTC
TAATTGG TAATTGG TAATTGG TGTGAAC TGTTTCC TTATTTCC TAATTATA TAATTATA TAAAAGTG	FAGAGGAAA FAGCGAAA FAGCGAAA AAATGCAGGAAAATGCAGGAAATGCAGGAATGCAGGAATGCAGGAAATGCAGGAAATGCAGGAATGCAGGAATGCAGGATGCATGC		TTCCTGGT
AATAGAA(AACAAAG CCCAAAA CCCAAAA GCCTTCT HIHIH HIHIHAG TTTCAAGAAAAA ACAAAAAA CCCTAAT	GGAGTCA' GGAGTCA' GGAGTCA' AGACATT' AGACATC' AGACTC' AGACATC' AGACATC' AGACATC' AGACATC' AGACATC' AGACATC' AGACTC' AGAC	CCCAGAAT
GCATTGG GCATTGGA GTTAGGA GTTAGGA GTTAGGA GTGCCA 	TACATTA TTACATTA TTACATTA TTACTATA TTACTATA TTACTATA TTACTACAA TTACTACATA TTACTACATACA	STTTTATT STTTTATT STTTTATT STTGTCGGG SCCATGGA SCCAGGGAAT	TTAGGTTT TAGGTTT TAAAGATA [
GGAGTAAA 	TAGTAAC CCACCAG CCATTTTT CCTTTTTTT CTTTTTTTTTT		FGGCAGAC
AACTCTGA AACTCTGA TAGACGTC TAGACGTC TAGACTT TAGATTTTC TCAAGTTTTC	AAATTTTC TTACTTTTTTTTTTTTTTTTTTTTTTTTTT	TGACAGT!	TAACCTGT TAACCTGT AAAATTTT IIIIIIIIIIIIIIIIIIIIIIIIIII
COATTGA 111111 COATTGA COATTGA COCTTC 1111111 COATTCA COATTCA COATTCA COATTCA CAATCATTA	TTTTTTATTTA TTTGATA' TTTGATA' SAGATAT' THILLICAT' THILLICAT' ACTGCAT' SACTACTCT	ATTGACAC TILLIII ACCTCAGC ACTCAGC ATTGACA ATTGACA ATTGACA ATTGACA ATTGACA ATTGACA ATTGACA	TTAAAG
AAAGAACCGATTGAAACTCTGAGAATAAGCATTGGAATAGAACTAATTGGTTTAAAGA	CACATATITIATITIAAAATITICIAGIAACTACATAAACAAAGTAAAAGTGAGGGGGGGAAAAAAAA	GTGCATTCATGCAGCTGACAGTTATATTTGTTTTATTGCAGTCATGATTTAAAATCAGC GTGCATTCATGCAGCTGACAGTTATATTTTTTTTTGCAGTCATGATTTAAAATCAGC GTTGCATCATGCAGCTGACAGTTATATTTTTTTTTT	ACCITGIGITAAAAGTAACCTGIGGCAGACTAGGITTCCAGAATTTCCTGGITCTGGTCA
	1278 C 2984 A 1338 A 1338 A 1398 T 1398 T 1458 T 1518 T 1518 T	404040	3524 P 1878 P 1878 P 1938 C 1938 C 1998 1 1998 1 2058 P 2058
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

```
icer; cytostatic; carcinogen; pharmacodyanamic marker;
ker; gene; ss.
                                                                                    4063
                                                                                                                                                                 2592
                                                                                                                                                                            4303
          2177
                     3883
                               2237
                                          3943
                                                    2297
                                                               4003
                                                                           2357
                                                                                               2417
                                                                                                           4123
                                                                                                                     2477
                                                                                                                                4243
                                                                                                                                                                                       2647
                                                                                                                                                                                                 4363
                                                                                                                                                                                                            2707
3823
                                                                                                                                                                                               CATTCCAAATCACTTAGCTCTTAGACTGATCTGTTTGTAGCAGTTG
                                                                                    CCTGAGCCACACGGCCTCATTCTGTGAGGGAGGGAAAGATTAGCC
                                                                                                                                                                                                                                                                        ession marker cDNA 27790
                                                                                                                                                                                                                                                                                                                                                                                     PREDICTIVE MEDICINE INC
                                                                                                                                                                                                                                                                                                                                                                                                Monahan JE;
                                                                                                                                                                                                                                        BP.
                                                                                                                                                                                                                                       CDNA; 2905
                                                                                                                                                                                                                                                                                                                                              5-183319P.
5-189862P.
5-207454P.
5-211314P.
5-219007P.
                                                                                                                                                                                                                                                                                                                                    .us05171
                                                                                                                                                                                                                                                              entry)
                                                                                                                                                                                                                                                                                                                                                                                                Š,
```